

AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol. 39.

CONTENTS FOR APRIL, 1925

No. 1.

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Formerly AMERICAN CARPENTER AND BUILDER

Year Around Building

ONE of the most fertile fields for the development of industrial efficiency is that of the elimination of seasonal variations. Such activity is of the utmost importance in the stabilizing of business and is far-reaching in its effects upon the entire population of the country. In past years the building industry has been one of those most greatly affected by seasonal variations, but it is evident that this condition is rapidly being reduced to a minimum.

Modern methods have made possible the carrying on of building operations during the winter months, and all that remains is to carry the message to the building public. The success of educational efforts which have already been undertaken along this line, is attested by a recent report to Secretary Hoover, by Dr. John M. Gries, Chief of the Commerce Department's Housing Division.

Business men throughout the country are aroused to the importance of this work and their efforts have been directed toward investigating local conditions and planning future building accordingly. The Builder's Exchange of the Cleveland, Ohio, Chamber of Commerce and the Board of Lumber Dealers are doing effective work through special committees. The Wilmington, Del., Chamber of Commerce has given wide circulation to an educational pamphlet, the Omaha, Neb., Builders' Exchange and St. Louis Master Builders' Association have used newspaper advertising, and the building congresses of New York and Philadelphia have been pioneers in this activity. These instances are evidence of the widespread feeling that business has much to gain by more stable building activity and they have resulted in a rapidly increasing amount of winter building.

Standard Building Contract

THE standard form of building contract which was approved at the Joint Conference on Standard Contracts held at the Department of Commerce, Washington, D. C., February 11 and 12, is being rapidly put into shape for circulation among builders throughout the country. It will probably be ready some time during April.

This form was approved by The Associated General Contractors of America and by the American Institute of Architects and is the most acceptable form as yet devised. It is designed to eliminate all unnecessary costs and disputes and these associations are urging builders to make use of the new form as soon as it is ready.

Educational Plan Adopted

A COMPLETE educational program aiming to interest college men in the retail lumber business and train

them for future managerial positions has been adopted by the Ohio Association of Retail Lumber Dealers in conjunction with Antioch College at Yellow Springs, Ohio. This movement originated because of difficulty in finding properly qualified men for such positions.

Antioch College operates under a novel method. All students spend alternate periods of five weeks in college and five weeks on practical jobs away from the class room. They are divided into two groups, two students holding each job alternating with each other.

The lumber dealers' plan contemplates: first, definite work in urging intelligent young men to enter the retail lumber field; second, the actual training of students in courses of study devoted to the industry; third, the conduct of a research laboratory and clearing house of information for the association.

One of the things most needed by the lumber dealer is more publicity and this will be undertaken through magazine and newspaper articles, motion picture films,

lectures and radio broadcasting from the college.

American Forest Week

AMERICAN Forest Week has been set for the week of April 27 to May 3, by President Coolidge, and wherever it is not in conflict with the state law or custom, Arbor Day will be celebrated during that week. In issuing his proclamation the President has urged organizations and citizens throughout the country to unite in the common task of forest conservation and renewal which is of such vital importance to the country as a whole.

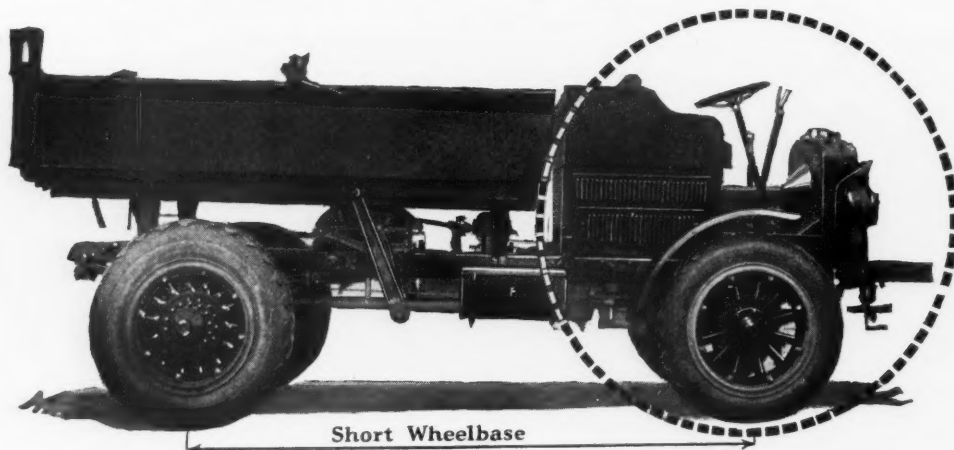


Copyright, 1925, by Star Company.

This Cartoon, Reproduced in the Chicago Herald and Examiner of February 28, 1925, Aptly Reflects the Great Interest in Building Activity Being Manifested in Chicago.

The Autocar engine is under the seat

*because every inch of wheelbase saved
means easier maneuvering in and
around building operations*



The contractor's special 3-ton Autocar dump Truck

Short turning radius
Time saved everywhere
Easy access to crowded places
Traffic congestion reduced
Terminal congestion relieved
Street space conserved

Loads more evenly distributed
Wear on tires and parts reduced
More space for pay load
Less overall length
Sturdy compactness
Extraordinary durability

The Autocar Company, Ardmore, Pa.

ESTABLISHED 1897

Direct Factory "Autocar Sales and Service" Branches or Affiliated Representatives in

*Albany	*Brooklyn	*Detroit	*Los Angeles	Orlando	*San Francisco	Trenton
*Allentown	*Buffalo	*Erie	*Memphis	*Paterson	*San Jose	*Washington
*Altoona	*Camden	*Fall River	*Miami	*Philadelphia	*Schenectady	West Palm Beach
*Atlanta	*Chester	*Fresno	*Newark	*Pittsburgh	Scranton	*Wheeling
*Atlantic City	*Chicago	*Harrisburg	*New Bedford	*Providence	Shamokin	Wilkes-Barre
*Baltimore	*Cleveland	*Indianapolis	*New Haven	*Reading	*Springfield	Williamsport
*Binghamton	*Columbus	*Jersey City	*New York	*Richmond	*St. Louis	*Wilmington
*Boston	*Dallas	*Lancaster	*Norfolk	*Sacramento	*Stockton	*Worcester
*Bronx	*Denver	*Lawrence	*Oakland	*San Diego	*Syracuse	York

* Indicates Direct Factory Branch

Autocar

gas and electric trucks

EITHER OR BOTH - AS YOUR WORK REQUIRES

A Specialist in Home Building

A. J. Matot, Prominent Builder of Portland, Oregon, Applies the Principle of Scientific Merchandising to Building Homes

By ALINE NORVELL HANDLEY

FOURTEEN years ago, with only the most rudimentary education, A. J. Matot started as a boy in knee trousers to learn the carpenter's trade.

Today he is known as the largest "home sweet home" builder in the northwest. Last year he built 187 homes in Oregon, ranging in price from \$1850 to \$16,000 and did a

is the Matot method, for he has adopted and applied the plan of scientific merchandising to the building of homes.

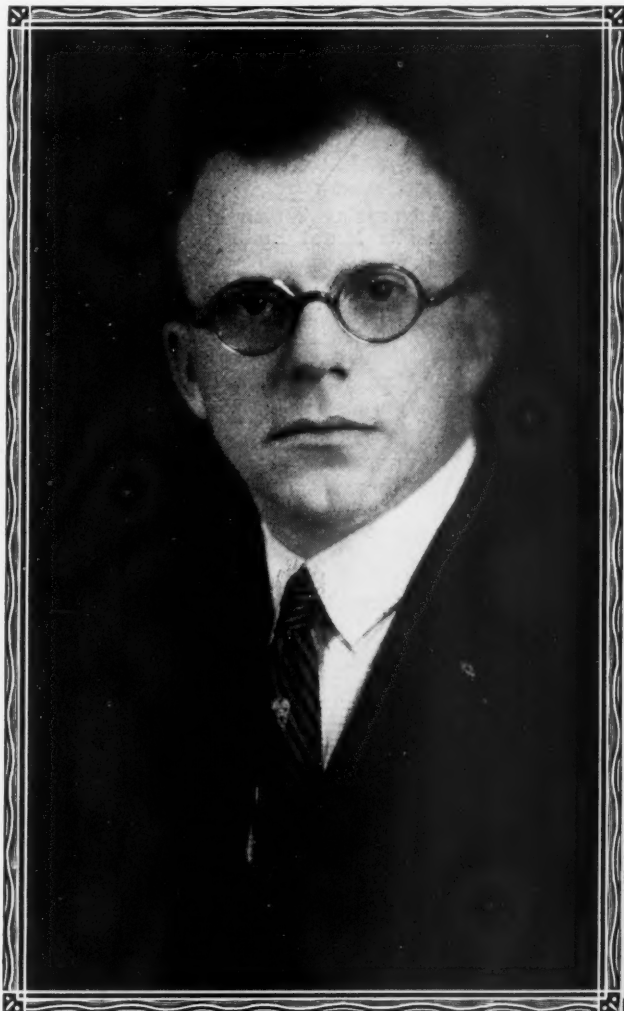
In the days when Mr. Matot began his career as a carpenter, he had his eyes set toward the goal of building contractor. Three years of carpentering and studying nights convinced him that he needed experience from another angle of the building business, so he started selling building materials. It was in this way that he obtained his business training.

For a number of years he sold building materials, which included selling readi-made and portable houses. He then went into business for himself as a building contractor along the old lines of figuring the cost of a building—and then doing the work for that figure, whether it proved to be a profit or a loss.

Always Matot visioned getting out of the building contractor's rut, to do away with that element of uncertainty which goes hand in hand with contracting, and four years ago perfected the Matot method which has met with such success.

This system of scientific merchandising consists, first of all, in doing a large volume of business. As the volume increases, the profit on each transaction can decrease and yet leave the total profits greater than if a small volume of business were done with large individual profits, and the lower the cost consistent with the best possible product the larger the volume will be. To this end, Mr. Matot uses every possible means to keep the quality of his buildings up and the cost down.

The Matot Construction Company maintains a display room which is a big feature of their system. In it a large number of designs of popular styled and priced homes, largely the so-called bungalow, English and Dutch Colonial types, are kept on file and the photographs of the completed homes shown.



A. J. Matot, of Portland, Oregon, Who Started as a Boy to Learn the Carpenter's Trade Fourteen Years Ago. Today he has won the distinction of being the largest home builder in the Northwest.

total business of \$487,000—almost a half million dollars.

This youthful builder, for he is still a young man, organized the Matot Construction Company four years ago and since that time has built over 500 homes; and every one of these homes has been built strictly to order—for Matot does not build to sell. There is a very special reason for this record of achievement, and that reason



This Is the Type of House Which Mr. Matot Calls His "Bread and Butter" House Because It Is the Style of Smaller Home Which, with Variations, Is Most Popular in Portland.

After selecting the design for his home, the home builder can see and choose the materials necessary to be used. Samples of all materials necessary to the construction of the home are shown in this display room—bath fixtures and lighting fixtures are shown by photograph, and hardware, bricks, stucco, paint colors, shingles, tiles and wall paper by actual samples; nothing is left to the imagination. This eliminates a great deal of strenuous shopping.

After selecting the design for his home and choosing the materials to be used, the home builder is brought to another important factor in the Matot method—the estimate sheet.

This estimate sheet is in the form of a question blank and every detail of the construction of the house has to be filled in. Nothing is forgotten; every feature of the house has to be specified, eliminating the bug-bear of things left out and which must be considered extras. Every item of construction is carefully and systematically considered before the signing of a contract, the actual cost figured, to which is added a *per cent* of the total cost, which is the company's profit.



Here Is an Example of the Kind of Advertising Which Mr. Matot Is Using with Such Success to Sell His Matot Built Homes.



A Corner of the Display Room Which Is the Big Feature of the Matot Method of Selling Homes. Here the prospective home builder can see samples of everything which will be used in building from the design all the way through bricks, paint, hardware, and wallpaper, to the bath and lighting fixtures. Nothing is left to the imagination.



This Dutch Colonial Is Among the Most Popular of the Matot Collection of Designs. It is good example of the houses which are being built from these plans.

This precision in figuring helps to explain the remarkable fact that the company has never had occasion to file a lien on a house nor has it ever experienced legal entanglements against a building.

The construction itself is done by the chain system, by regularly employed specialists in their particular lines. To illustrate, rough carpenters, siding men, shinglers and inside finishers follow each in rapid succession insuring greater efficiency, better workmanship, quicker results and in the end, the completed home for the lowest possible price.

Owing to the large quantities of supplies used, Mr Matot is enabled to contract for many of his materials at a reduced figure, another item in keeping the cost down. Good workmanship and the best possible materials are never sacrificed in the interest of low prices, however, and as a splendid example of the good will which his customers hold toward him, he has built 22 homes in the past two years for the members of one family, their relatives and immediate friends.

The Matot Construction Company concentrates on smaller, moderate priced homes as there is the greatest demand for



Attractive Interiors Are Characteristic of Matot Built Homes as Can Be Seen from This View of the Dining Room of One of His Houses.

that class of building, and the company assists its customers in obtaining loans on their property enabling them to pay their indebtedness out in small monthly payments.



Installment Plan Meetings

A SERIES of meetings, similar to that recently held in Chicago, have been announced by the Save the Surface Headquarters. These conferences are held for all manufacturers, salesmen, jobbers, retailers and contracting painters, to explain the opportunity presented by the new installment plan for painting and other items of interest to every one connected with the painting industry.

These conferences are scheduled for New York, Kansas City, Cleveland, St. Louis, Pittsburgh, Dallas, Minneapolis, New Orleans, Denver, Atlanta, Salt Lake City, Richmond, Los Angeles, Boston, San Francisco, Philadelphia, Portland, Ore., and Seattle.

The operation and opportunities of the installment plan are also offered to the industry, by the Save the Surface Headquarters, in three pamphlets, "The Paint and Varnish Manufacturers and the Installment Plan," "The Salesman and the Installment Plan" and "The Master Painter and the Installment Plan." "The Retailer and the Installment Plan" will be issued soon.

The first of these is supplied free for executives, the second free for distribution to salesmen, and third and fourth at \$3.50 a hundred for general distribution. These two provide a space on the front cover for the individual firm imprint and imprinting is furnished at cost if desired.

Working in co-operation with the Save the Surface Campaign, the Aetna Finance Corp., of Philadelphia, and the Commercial Credit Co., of Baltimore, instituted the installment plan last year. Because of wide acceptance of this plan which assures a very large volume of business, these companies have recently announced a reduction of rates which should prove a still greater aid in the development of new business for the industry.



An English Type Which Is One of the Most Popular and of Which Mr. Matot Is Justly Proud.

Architectural Designs of Great Merit in This Month's Duotone Plates

Four Notable Perspectives Illustrated in Tint

By **BERNARD L. JOHNSON**

Editor, American Builder

A VERY fine series of plates is presented in this month's selections of notable architecture and interest is added by the wide variation in subject and treatment.

Surely nothing more majestic and beautiful could be presented than the Cathedral of St. John's, the Divine, which will be not only the largest church edifice in the United States but the third largest cathedral in the world.

Cathedral of St. John the Divine, New York City

The largest cathedral in the world is St. Peter's in Rome and next to it in size ranks the Cathedral of Seville, Spain. The Cathedral of St. John the Divine on Morningside Heights, New York City, when completed about four years hence, will be the third largest in the world. A contract has just been let to Jacobs & Youngs of New York City for the construction of the nave and transepts, also the remodeling of the sanctuary, according to the plans of Ralph Adams Cram, architect, noted for his work in Gothic design.

The original plans for this magnificent cathedral were drawn by Heins & La Farge and were selected out of 60 sets of plans submitted in 1889. The selection was not made until July, 1891, and construction was started soon afterwards. Quite a few architectural firms have since been associated in this work, including the construction of the sanctuary and seven chapels which surround it. That more has not been accomplished in the 35 years which have elapsed has been due, mainly, to lack of funds. Now, however, a nationwide drive for funds is meeting with a splendid response from every section of the country and from people of many creeds.

Mr. Cram's designs for the nave and the remodeling of the sanctuary have now been accepted and, as stated, the contract has been let and amounts to the sum of \$5,900,000. There are eight 60-foot granite columns back of the altar in the present sanctuary, each of which weighs 130 tons. These are now surmounted by Byzantine arches and are to be replaced by arches of pure Gothic, so as to secure complete harmony of design. The temporary sanctuary roof is to be replaced by an arched and groined ceiling which will be loftier and more beautiful. About \$9,000,000 has already been spent and the completed cost, it is estimated, will be \$15,000,000. The structure, when complete, will seat 7,000 people and there will be room for several thousand more standing. When completed, St. John's will be larger than any English, French or German cathedral.

Miami-Biltmore Hotel, Coral Gables, Miami, Florida

This beautiful hotel design by Schultze & Weaver, architects, is in the style of the Italian Renaissance and shows a tower 300 feet high which is said to be a slightly modified copy of the famous Giralda, or Bell Tower of the Cathedral of Seville, Spain. The new Miami-Biltmore Hotel will have 400 guest rooms and many features of entertainment and recreation. The tower, which is to be 50 feet square, will contain special five-room suites and large apartments whose windows will command wide views

of sea and beach. Throughout the building suites are arranged in two, three or more rooms.

The hotel is comprised of a group of buildings covering an area 925 by 320 feet. One of these is the Sports Building and there will also be golf courses, tennis courts and swimming pools. In addition to the present swimming pool a new one will be constructed which will be 150 feet long by 125 feet in width. Mr. George E. Merrick, owner and developer of Coral Gables, is associated with John M. Bowman in the new Miami-Biltmore Hotel enterprise and the Miami-Biltmore Country Club.

American Insurance Union Building Columbus, Ohio

Columbus, Ohio, will have, in this new building, a structure which would command attention in the largest metropolis. It will occupy an entire city block and will have a tower 485 feet in height. The space from the 19th to the 31st floor will be devoted to executive offices and club rooms of the American Insurance Union. A 600-room addition to the Deshler Hotel will be housed in the new building and will be connected with the original hotel building by bridging over Wall Street. The West Broad Street front will include the main entrance to the office building and the lobby leading to the new Keith Theatre in the rear.

This fine, impressive building is of Gothic architecture throughout, designed by the well-known architect, C. Howard Crane; Elmer G. Kiehler and Ben A. Dore, associates. The exterior of the building will be in terra cotta having a stone texture. Both front and tower will be floodlighted at night and surmounting the tower will be a colossal brazier containing a powerful searchlight which will throw a brilliant shaft of light vertically into the sky. This pillar of light will be visible for 100 miles in every direction.

American Furniture Mart Annex, Chicago

The largest building in the world is to become larger. It is also to become distinctly better looking and will have a tower more commanding in height than any yet built in Chicago, outtopping the Wrigley Building, the Straus Building and Tribune Tower. The Furniture Mart Tower will contain the immense water tanks, elevator machinery, pent houses and other objects which would otherwise be unsightly on roof or skyline.

"The two most noted towers," writes Mr. George C. Nimmons, the architect, "and the ones usually regarded as the most beautiful in the world, are St. Mark's Cathedral Tower at Venice, which is approximately 48 feet square and 325 feet high, and the Giralda, at Seville, Spain, 45 feet square and 275 feet high. St. Mark's, in height, is seven times its width, and Giralda six times its width. The proportions of the Furniture Mart Tower will approximate the proportions of St. Mark's, but differ in treatment, as the two European towers are both done in Renaissance architecture, while the Furniture Mart will be distinctly Gothic."

Mr. N. Max Dunning is associate architect. The total cost of the new addition is estimated to be \$4,000,000.

ART SUPPLEMENT *of* NOTABLE ARCHITECTURE

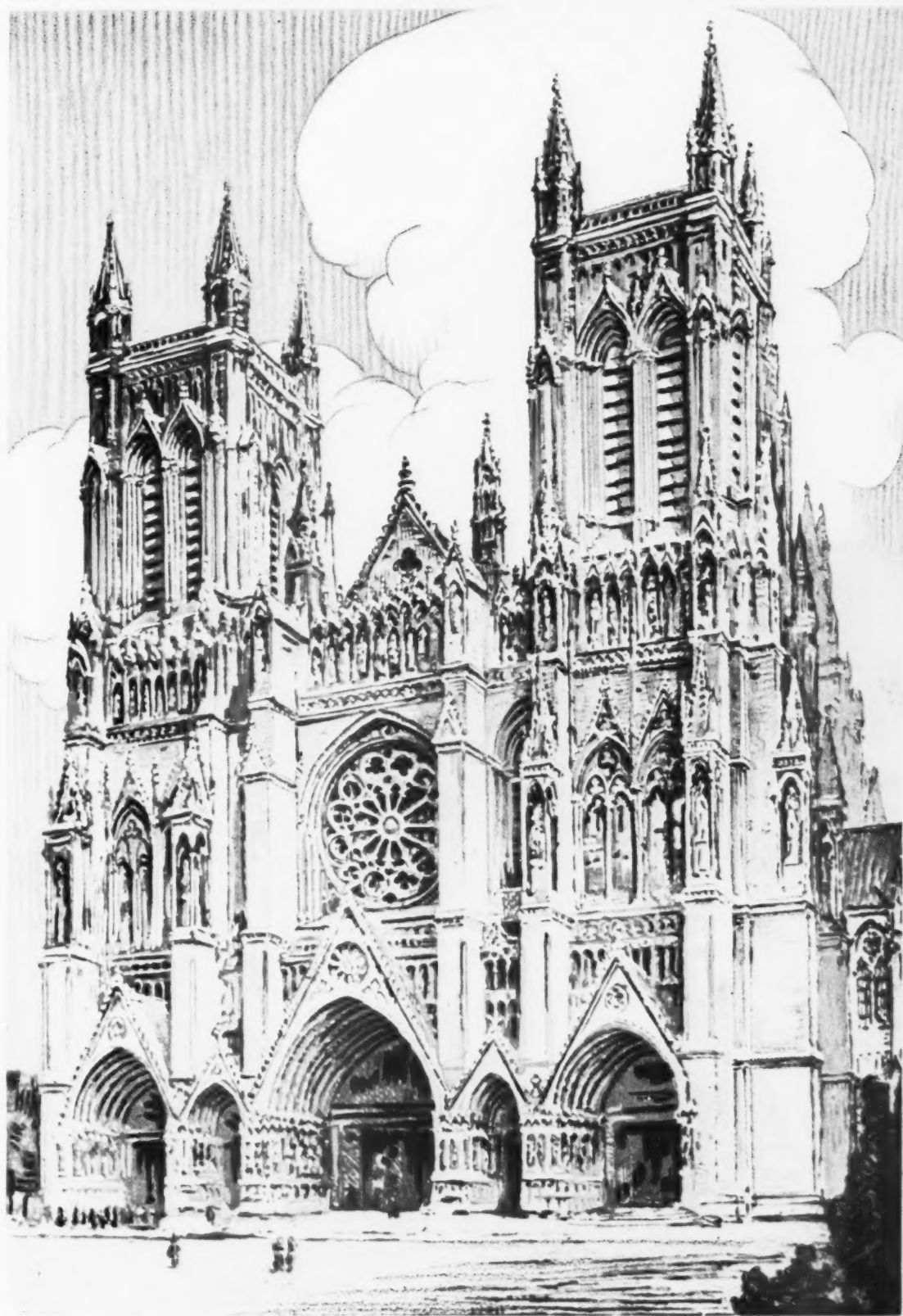


PLATE XXV

The CATHEDRAL OF ST. JOHN THE DIVINE, New York City; Ralph Adams Cram,
Architect in charge of the completion of this mighty
structure which was begun in 1891.

The AMERICAN BUILDER, April, 1925

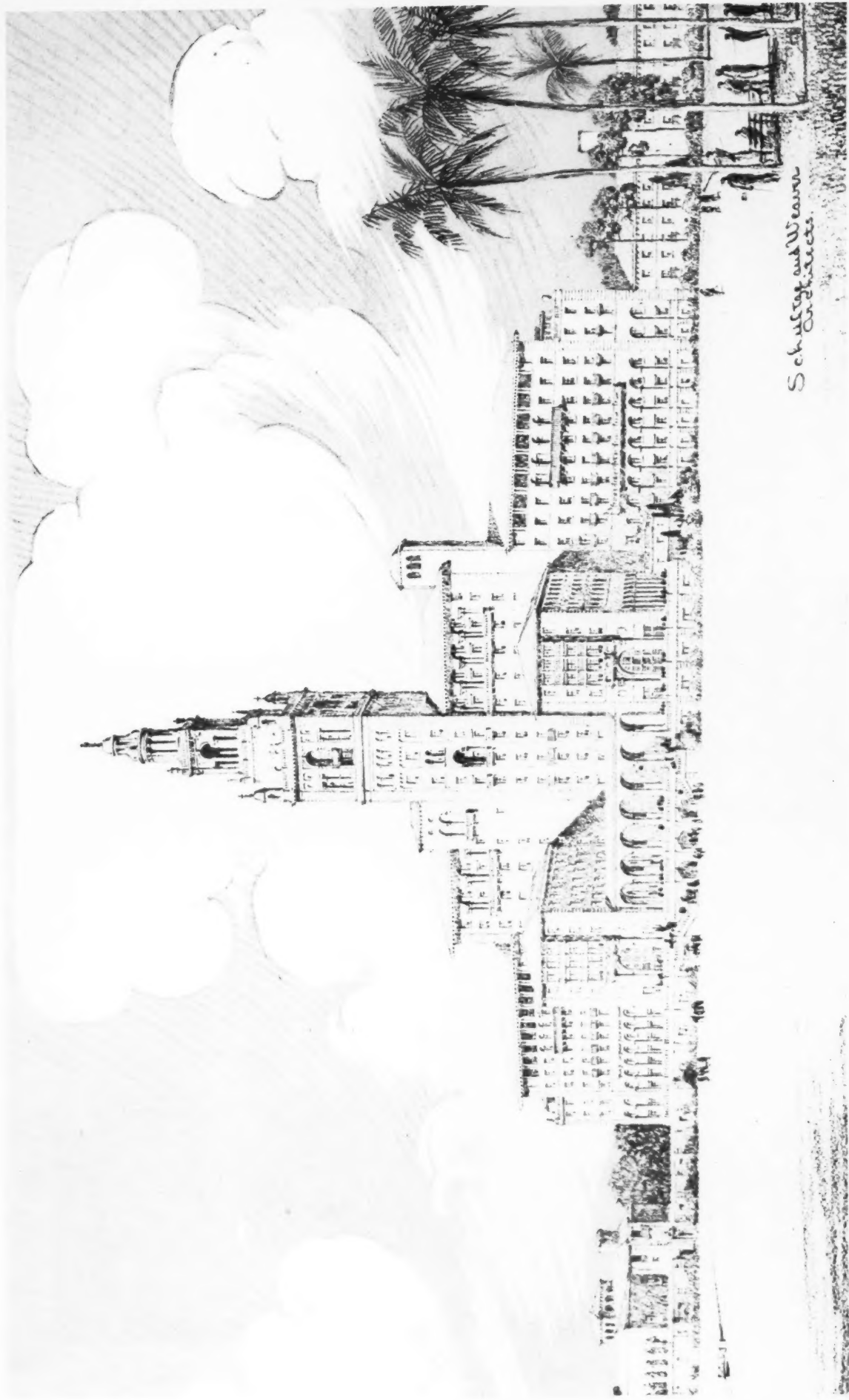


PLATE XXVI

The MIAMI-BILTMORE HOTEL, Miami, Florida; Schultze and Weaver, Architects; 925 feet long with a tower 300-feet high modeled after the world famed Giralda of the Cathedral of Seville, Spain.

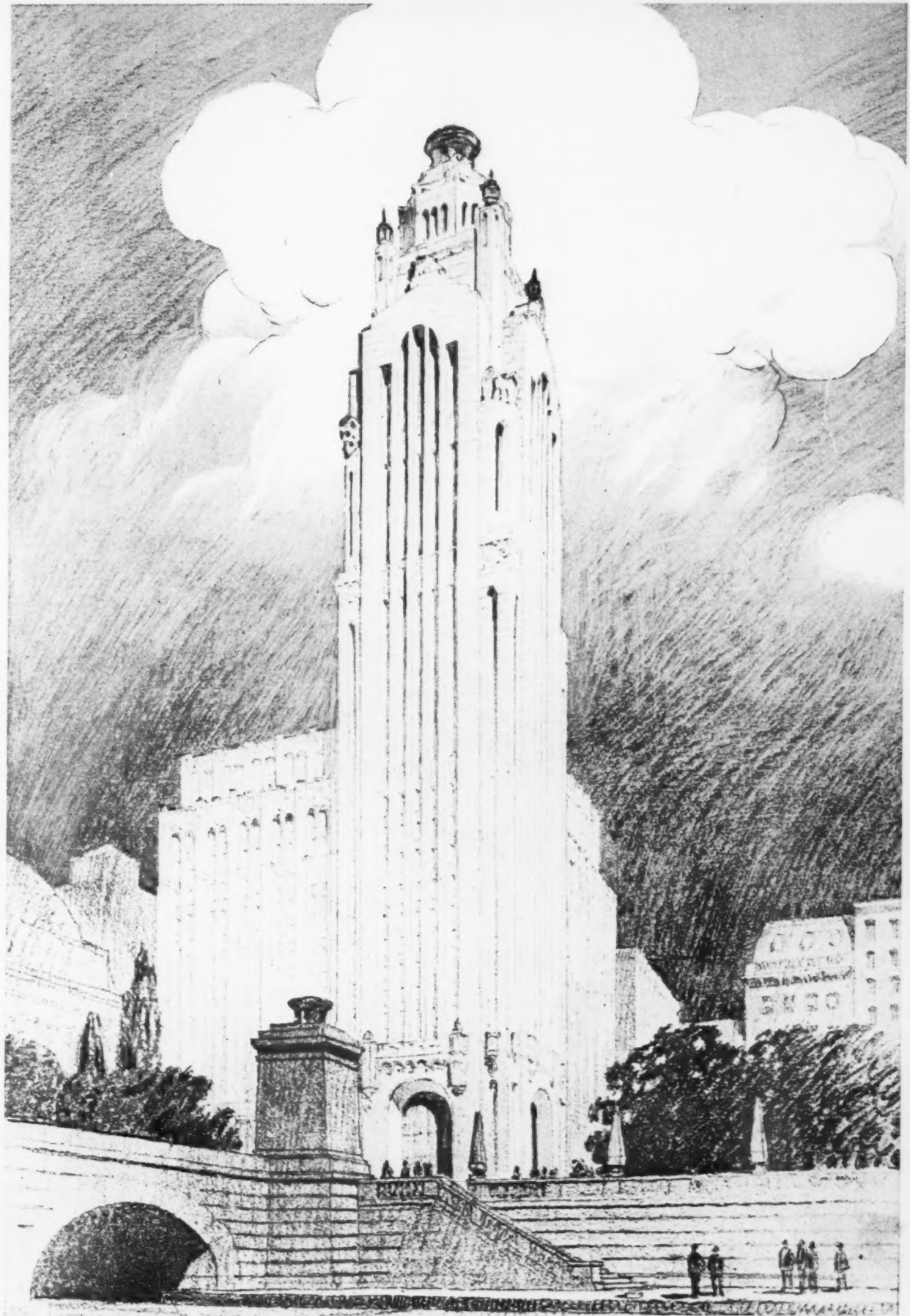


PLATE XXVII

The AMERICAN INSURANCE UNION BUILDING, Columbus, Ohio; C. Howard Crane, Detroit, Architect; a combined Office Building, Hotel and Theatre, with tower rising 485 feet.

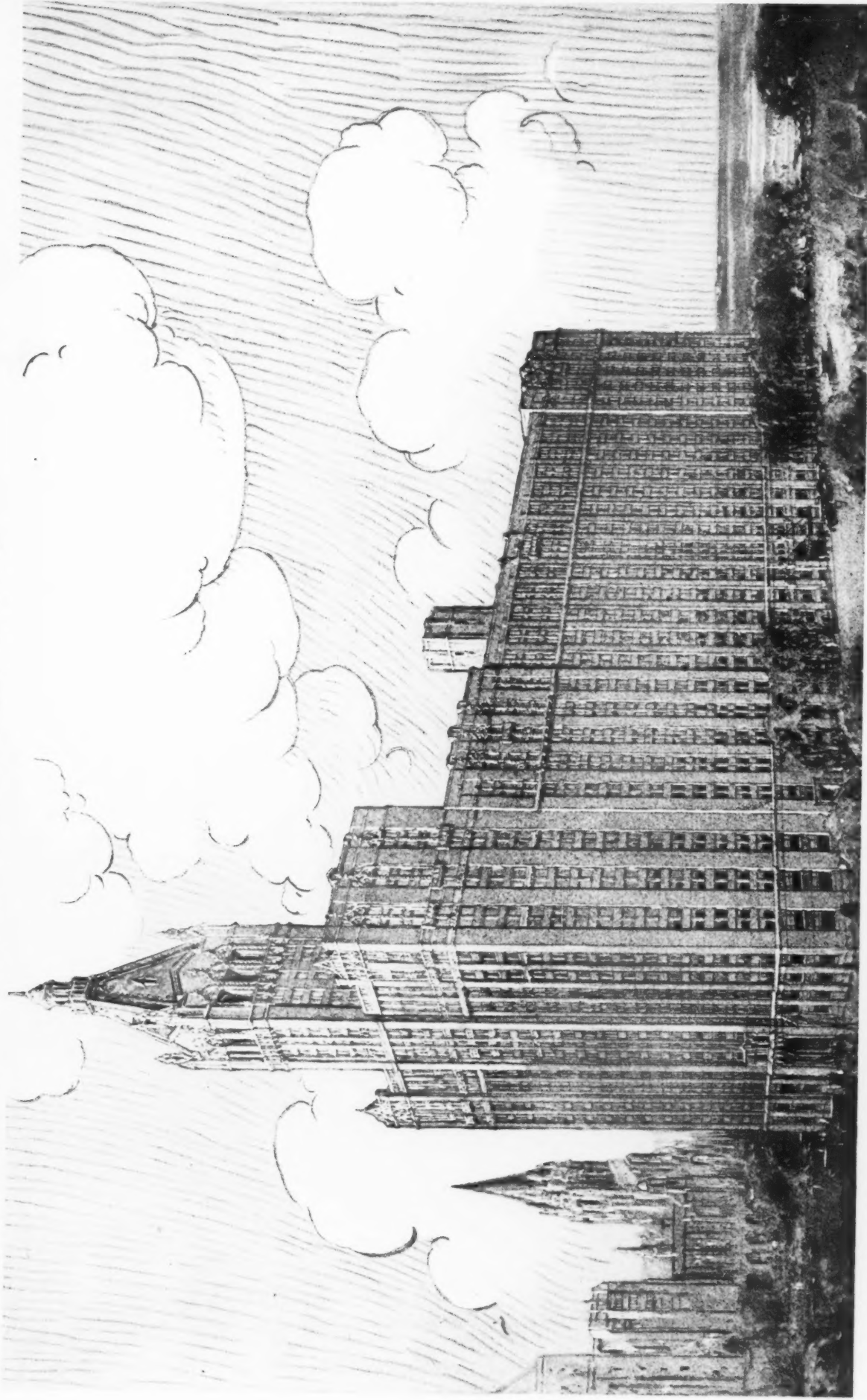
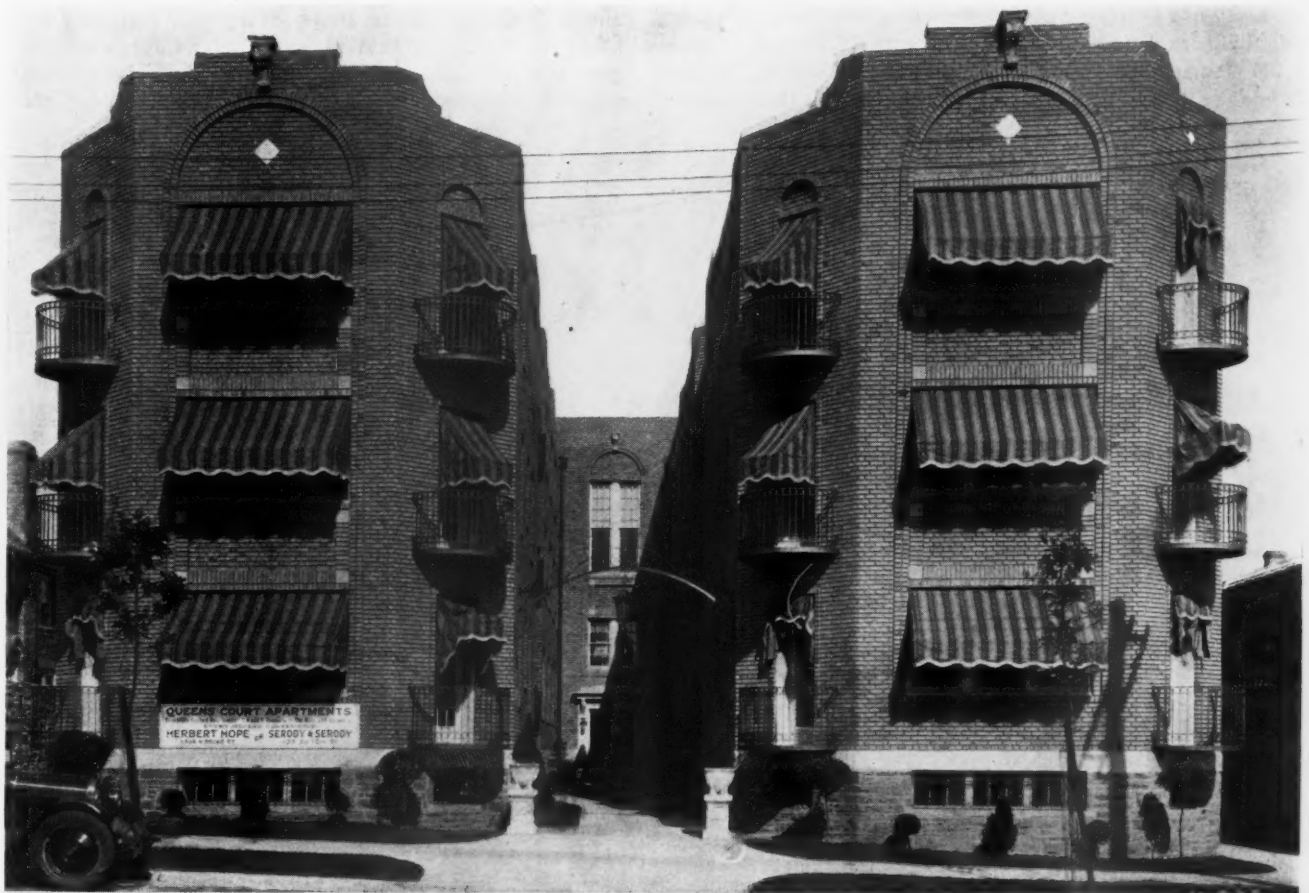
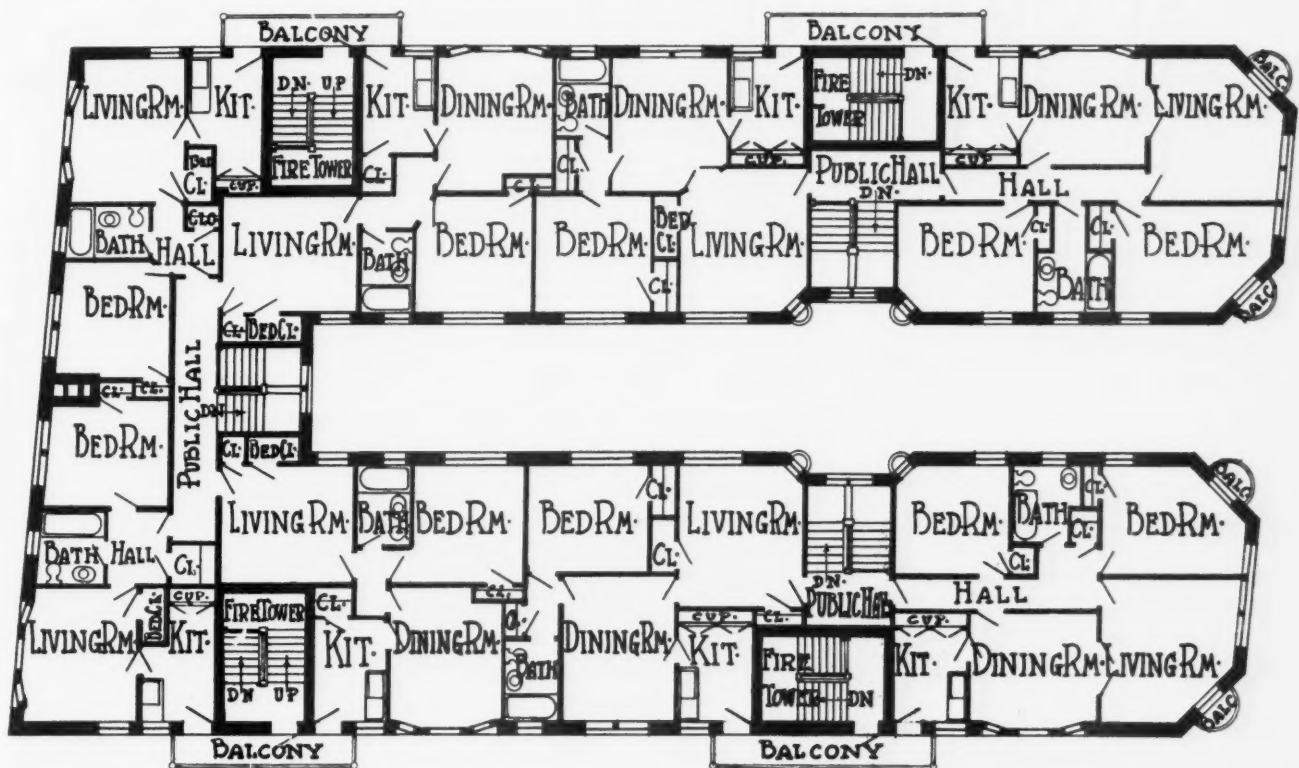


PLATE XXVIII
The AMERICAN FURNITURE MART, with New Tower Addition, Chicago; George C. Nimmons & Co. and N. Max Dunning, Associated Architects; the Largest Office Building in the World; 550 by 218 feet, 16 stories high in the main section, now built and occupied, and 20 stories high in the Tower Addition.

New Queens Court Apartments



The New Queens Court Apartments, in Philadelphia, Edward A. Roth, Architect, as an Excellent Example of the Popular "U"-Shaped Apartment Building. Brick, wrought iron balconies and brightly striped awnings combine to make a highly attractive exterior. The floor plan shows the effective utilization of all available space in laying out these three, four and five-room suites.

An Ideal Suburban Development, Shaker Heights Village

The Van Sweringens of Cleveland Created this Beautiful Community of Homes as Realty Promoters Before Effecting the Merger of Five Big Railroads

A VISITING English lecturer, after viewing the scenery between Oneonta and Oshkosh from the window of his Pullman, said of American homes: "The one trouble with American villages is the appearance the houses give of having been turned out of the same factory. They are too much alike, geometrically and architecturally."

Had this lecturer visited Shaker Heights Village, just east of Cleveland, Ohio, and not far removed from the beaten line of travel between Oneonta and Oshkosh, he probably would have had a different conception of American homes. He would have seen a village, situated on a plateau about 400 feet above the level of Lake Erie, embracing practically every nuance of architectural treatment. He would have seen magnificent country estates and residences of practically every range of construction cost, beginning with the \$20,000 and \$25,000 home and running the gamut all the way to the \$500,000 residence.

Covers Five-Mile Area

Shaker Village, a self-governing, incorporated municipality, covers an area of about 5 square miles. The village has been under preparation for about 20 years; under sale, about 10 years. Its development has been unhurried and progress has been consistent. Home development throughout this area is pretty evenly distributed. There are about 1,100 homes, built on sites ranging from lots of 60-foot frontages to parcels of three and four acres in the Country

Estates section, not mentioning sites occupied by schools or public buildings.

Strictly speaking, the village is a suburb of Cleveland, but it is just across the eastern boundary, and the trip by the Rapid Transit Railway is so brief a run as practically to eliminate the suburban aspect of the district.

Running time from Shaker, at Moreland Circle, to Cleveland's Public Square is about 20 minutes, which is less time than it takes to travel from downtown to uptown Cleveland over other lines. And improvements are even now contemplated that will so reduce the running time of the Rapid Transit Line as to bring the village about as near to the Public Square, transportationwise, as East Fifty-fifth Street, which is regarded as belonging to the downtown Cleveland district.

The explanation for this rapid service is found in the fact that the railway is operated over a private right of way, through a natural ravine, with grade-crossings eliminated. O. P. and M. J. Van Sweringen, of Cleveland, who created and developed Shaker Heights Village, built the Rapid Transit Railway which has been one of the great factors in the growth and progress of the Shaker Heights section. Incidentally, these brothers, 47 and 45 years, respectively, have in no wise abated their interest in the Shaker Heights development, though of late years they have gone in for large-scale railroad enterprises, including their project for a Union Station in Cleveland for steam and interurban railroads, now being built at the Public Square, and their proposed unification of the Nickel Plate, Chesa-



One of the Many Fine Homes in Cleveland's Beautiful Suburb—Shaker Village. Residence of R. C. Rudolph, Parkland Drive and Attleboro Road. Meade & Hamilton, architects.



(1) Boulevard School, One of the Five Modern Schools in Shaker Village, George F. Hammond Architect. (2) Home of C. K. Chisholm, Parkland Drive. (3) Five small lakes give a summer resort atmosphere to Shaker Village. Residences of E. A. Kruger and A. S. McClintock on the farther shore; White & Shupe, and H. P. Shupe, architects. (4) Residence of Newton D. Baker, former secretary of war; Meade & Hamilton, architects. (5) Home of T. P. Robbins, South Park Boulevard and Eaton Road; H. P. Shupe, architect.

peake & Ohio, Hocking Valley, Pere Marquette and Erie railroads, totaling more than 9,000 miles of roadway and 14,000 miles of track.

An Attractive Setting

About 1905, it became apparent to the Van Sweringen brothers that Cleveland would require a nearby locality offering real home possibilities. Commerce and industry were making inroads in the districts theretofore reserved for residential purposes. For geographical and other reasons, the Van Sweringens figured the residence trend would be eastward or could be guided in that direction. They set about acquiring land in the Shaker Heights section. The funds resulting from sales were used for the purchase of additional land, until finally the operations of these brothers extended over the entire tract now occupied by Shaker Village.

The arresting thing about Shaker Village is the harmony of scale and fitness. The conventional layout is not to be found there. Streets are sweeping, semi-elliptical highways converging at the main boulevards which are 180 and 190 feet wide. The old criss-cross pattern was discarded. Instead of following the old-style arrangement, the developers set up a style of their own. Old growth of forest trees assisted this fitting and framing of the district. Newer growths were added. In all, 45 miles of finest paved streets were provided, and nearly double that of sidewalks parked with trees for their future shading. Three hundred and fifty acres of parks traverse the village and a chain of beautiful lakes enhances the setting.

Much of its present character the village owes to protective restrictions. These exclude commercial, merchandising and industrial enterprises. Multiple houses likewise are

barred, except in specifically designated locations. The village has not been permitted to "grow up like Topsy." It has been shaped and guided along careful lines and its evolution has been just what the Van Sweringen Company has all along planned for it. Safeguards have been established governing standards of home construction. All plans for buildings must be submitted for approval to the Van Sweringen Company. Grades, lot lines and locations are designated and controlled in the case of the finest residences as well as the \$20,000 residences. The result is that each homebuilder is assured that neighboring residences will, like his own, be of appropriate design and style harmonizing with the general character of the locality.

It is the symmetrical and harmonious effect achieved throughout the village that calls for a second glance. The visitor, no matter how little versed he may be in architectural lore, can see here the general care and attention given to architectural detail and landscape treatment, "set-back," and the like, both with respect to the moderate priced homes and the costlier and more stately residences. An architectural patchwork has been avoided.

Six Schools in Operation

Shaker Village presents other aspects of development besides architecture. On the educational side, it has kept abreast of the population increase with its attendant school enrollment. Six schools are in operation, and one in preparation, and when the latter is completed the village will have invested a total of about \$2,000,000 for education. The present schools will be supplemented by others as the population increase may require. The John Carroll University has acquired a large site on property adjoining the village.

Incidentally, the Country Estates district is one of the most picturesque parts of the village. It consists of 325 acres, of which 50 acres have been dedicated to park purposes. It is traversed by two broad boulevards and two wide parkways, the latter including natural ravines and watersheds for practically their entire length. Streamlets fed by springs empty into Horseshoe Lake at the western end of the district. The parkways converge at this point, forming a picturesque peninsula-shaped park, jutting approximately 1,000 feet into the water.

Large and stately residences already have been built in the Country Estates district and homesites have been acquired by purchasers who intend building attractive manor type residences there. The central portion of the

district comprises two, three and four-acre sites. The homesites throughout will have setbacks of 100 feet, 75 and 60 feet, according to localities, while restrictions covering construction call for attached garages so as to permit unhampered view of rear gardens and terraces.

On the recreational side, Shaker Village has within its boundaries two country clubs—the Shaker Heights and Canterbury, the Cleveland Tennis Club, the Troop A Riding Academy with its superb equipment and the Shaker Lakes Canoe Club. The village has water mains and two complete sewer systems. There is electric lighting on every street. Natural gas follows sufficient building.

Phenomenal Increase of Values

Despite its advantages, the tax rate in Shaker Village, payable in 1923, is among the lowest in Ohio (namely, \$1.54 per \$100) for municipalities in its class. Speaking of the growth of the village, particularly from the angle of its increased taxable values, the auditor of Cuyahoga County, where Shaker Heights Village is situated, said:

"The land was appraised for taxation in 1900 for \$240,000. The appraisal was made on a 60 per cent base, which would indicate a true value at that time of \$400,000. This same land was appraised for taxation in 1923 at \$29,282,320. The per cent of interest over the period is 7,200, or more than 300 per cent each year for the entire 23-year period. It is doubtful if there is another taxing district in the entire world which has made such phenomenal increase in land values during this period. It is a very conspicuous example of what may be accomplished by constructive real estate development."

Shaker Heights Village has just closed the most prosperous year in its history from the standpoint of realty sales and new building. Sales of homesites during 11 months of 1924 totaled \$3,500,000 and 551 new buildings were erected having a total value of \$6,786,560. In each case, the figures exceed those for the year 1923 by about \$1,500,000.

Included among residences under construction in Shaker Village are 24 being built by the Van Sweringen Company for the purpose of assisting the larger development of certain districts. This program, now nearing completion, includes nine residences designed by Howell & Thomas, architects; 10 by Bloodgood Tuttle, and five by Philip L. Small. W. W. Jepson, supervising builder, is erecting 13; J. L. Brazee, five; Edmund Foley, five, and Albert Metzger, one. The landscaping is being done by A. D. Taylor, Donald Gray and Angelo Palermo.

Though reflecting varying architectural influences, the English cottage motif predominating in the majority of instances, all of the residences are the two-and-a-half story type which distinguishes Shaker Village construction. Gardens front and rear, attached garages, living rooms and master bedrooms of generous proportions with ample provision for the service portions and interior construction that permits of various pleasing results from a decorative standpoint, are features. Other notable characteristics are seen in the methods by which the problem of exposure, entrances and exits to the house and garage, as well as service portions, have been handled.



These Fine Dwellings Are the Homes of R. J. Firestone and F. B. Stearns, on South Park Boulevard, Shaker Village; Searles, Hirsh & Gavin and E. E. Smith, Architects.

Grand Rapids' Home Sweet Home

Michigan Firm Finds Demonstration Home Pays Even When Responsibility and Expense Fall Chiefly On One Organization

BUILDING a demonstration home is a profitable venture even though the major portion of the burden falls upon one firm.

This, at least, is the opinion of Dick and William Rottschafer, of the Standard Builders' Supply Company, directly responsible for the building of "Grand Rapids Own Home Sweet Home" in Grand Rapids, Mich., after no little effort and no small amount of money had been expended upon the project and after at least a part of the results have become tangible.

Although the burden of the building was carried by the one concern, it was found that many manufacturers, dealers' sub-contractors and others in the building field, were more than willing to lend their efficient co-operation in the project which had no other purpose than the betterment of the building industry in Grand Rapids.

Mr. Dick Rottschafer writes of the home:

"It is, of course, a fact that this enterprise as conducted by two persons, was a big task. Many firms co-operated, but there was much expense and responsibility for the builders, but we are sure that the home has more than attained its purpose. It is selling more houses for the builders, more material for the dealers and making more work for the sub-contractors.

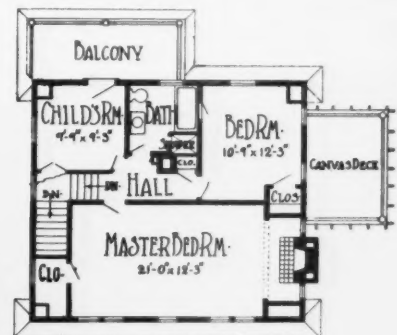
"Possibly a more important result than any of these is that it is making Grand Rapids, more and more, a 'Good Place to Live,' because of the spirit shown by the thousands of persons who went through the 'Home Sweet Home.' The actual interest shown by coming again and again and staying for hours at a time convinced us that people really want and crave a home of their own in preference to a two by four flat at a rental of from \$50 to \$150 a month.

"Everyone who co-operated in building the home is satisfied that it really worked wonders for all concerned; not alone to the community, but to the individual firms as well, through results which will be apparent in the months and years to come. The house really created a desire for homes in many persons who passed through it by showing them in a concrete and tangible form something that had been in the back of their minds for a long time."

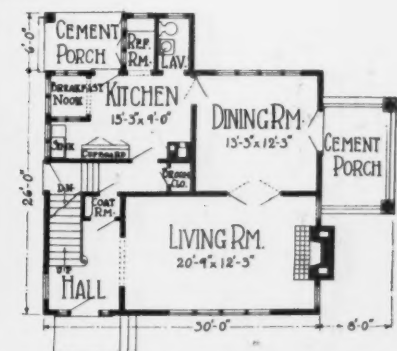
The attractive Dutch Colonial home was designed by Mr. William Rottschafer and presented a most pleasing appearance to those who thronged it during the time it was on display. The exterior was finished in white stucco with the stained shingles of the roof and the brick of the fireplace chimney and furnishing a well conceived contrast. The home is 26 by 30 feet with



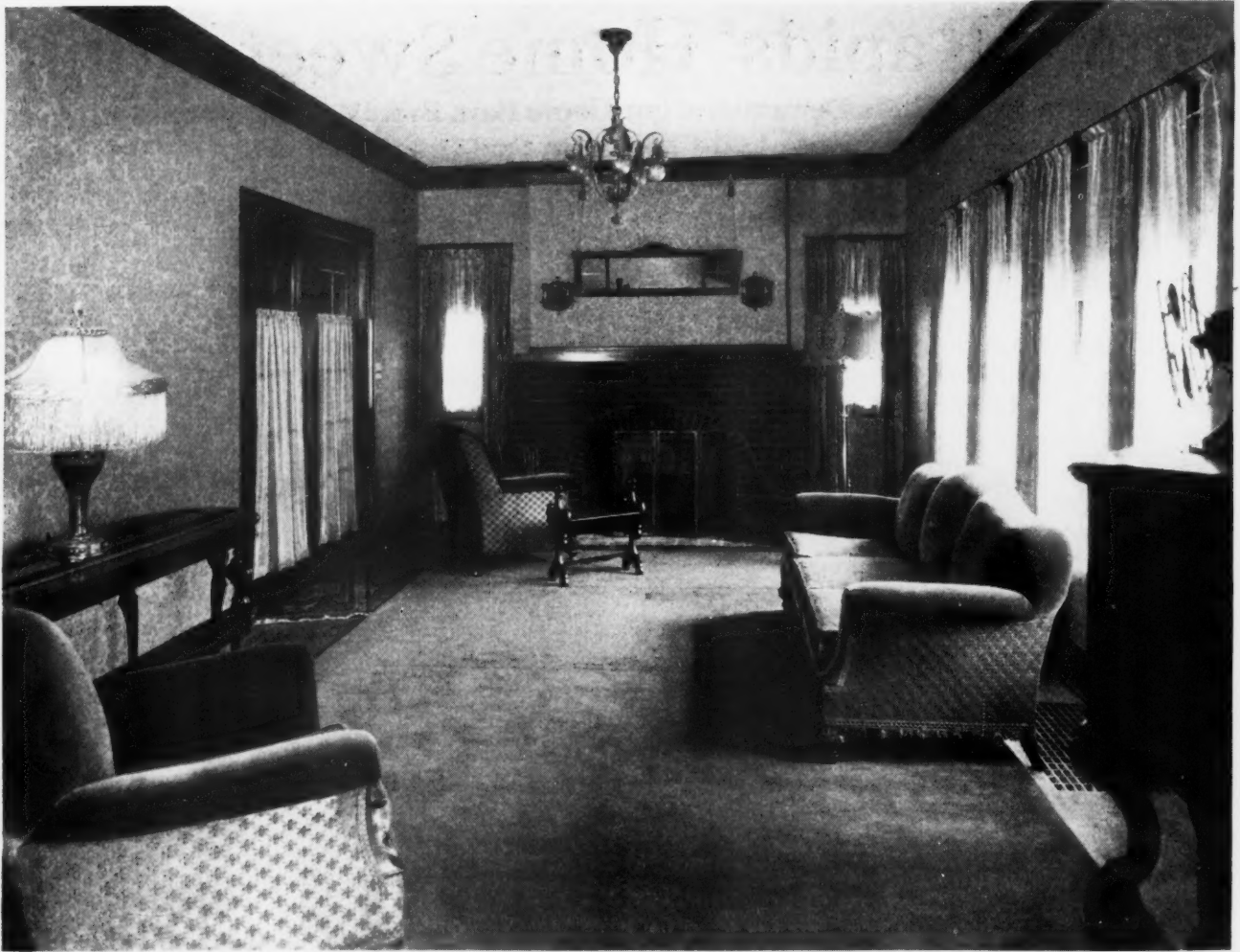
Dick and William Rottschafer Were Responsible for the Erection of this Attractive Demonstration Home in Grand Rapids, Michigan. Williams Rottschafer designed the house and a number of other Grand Rapids firms and nationally advertised manufacturers co-operated in the project.



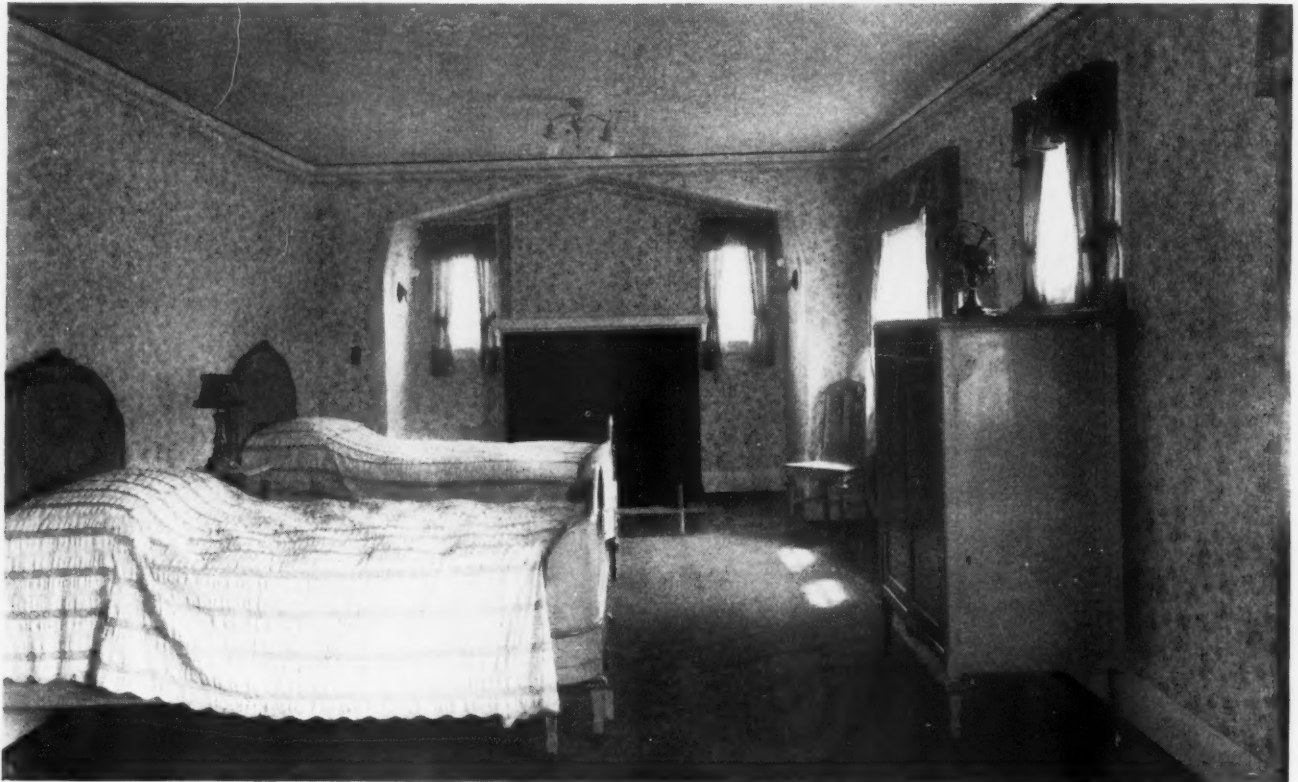
The Large Master's Bedroom Is an Unusual Feature of the Grand Rapids Home.



The First Floor Plan Shows Unusual Convenience. Notice that the passage through the coat room allows the rear of the home to be reached from the front entrance without walking through the living room.



The Fireplace at One End of the Living Room of the Grand Rapids Home Sweet Home Gives a Natural Center for the Grouping of Furniture in the Room, While the Abundance of Light and Ventilation Assure That It Will Be Cheerful in the Winter and Cool in the Summer Months.



An Ingle Nook Which Houses a Fireplace Is One of the Attractive Things Noticeable About the Master's Bed Room in the Grand Rapids Home Sweet Home. The unusual size of this room made an especial appeal to the prospective home builders who attended the exhibition.



The Careful Panelling of the Wallpaper Is a Part of the Planning of This Room Which Attracted Favorable Comment From Visitors to the Grand Rapids Demonstration Home.

the side porch adding 8 feet to the width and the extension on the rear, 6 feet to the depth.

The plan of the interior is especially well done for a home of this size. Entering the front door the visitor is in the vestibule, where the ornamental stairway leads to the second floor and where the thoughtful designer has provided a coat room to care for wraps and coats. An unusual feature of this room is that it permits one to go from the front door to the rear of the house without passing through the living room.

This living room, as shown on page 142, owes much of its attractiveness to its rectangular shape and its wealth of light. The fireplace in the outer wall provides a natural gathering place for the family group and the possibilities of the room are shown by the furniture, rug and draperies which were installed in the home before it was opened to the public. It will be noticed that the dining room can be isolated from the living room by French doors when occasion requires.

The dining room is made pleasant by the well grouped windows in the rear wall and the French doors which lead to the porch. The manner in which the interior of this room is finished, as shown in the illustration, is worthy of study, as the panelled wall paper is well handled.

It is in the kitchen of the home that a great deal of the care and attention of the builders have been centered, since they realized that much of the appeal of the home for the average woman who inspected it would come from this room. And the manner in which it has been built shows that the attention to the details of this room has not been wasted.

A study of the plans show that this consideration for the kitchen began before the house was erected and a study of the equipment of the finished room will reveal how well it was carried to completion. The room is large enough to meet all demands likely to be made upon it and small enough so that the work may be handled in an efficient manner.

It will be noted from the illustration of the kitchen that it is lighted in the most approved manner, by a fixture near the ceiling which floods the room with light without glare or shadows, and that auxiliary lights are placed where they are likely to be useful. A feature of the kitchen which does not show in the illustration is the installation of a refrigerator which may be iced from the outside and of a package receiver where deliveries may be left without disturbing the housewife. This last ingenious device is so constructed that after a delivery has been completed in one of its two compartments it is automatically locked

so that it may be opened only from the interior of the home. Thus two separate deliveries may be received without the danger of either of them being stolen.

The unusually attractive and convenient breakfast nook was a feature of the home which proved to be most popular with those who inspected the home. It is shown in the illustration of the kitchen, ready for use. When it is not used as a breakfast room, the table and the seats may be folded into the wall, out of the way if the space is desired for some other purpose. It will be noticed that this room has been provided with a double convenience outlet at table height for the accommodation of electric appliances used in preparing many of the lighter meals. These are details which cannot fail of appreciation by the housewife.

The master's bedroom on the second floor of the home is one which is decidedly unusual for size and attractiveness. The ingle nook which accommodates the fireplace adds a charm to this room which is seldom duplicated in a home of its size. It can be seen readily that a room such as this in a demonstration house would increase the longing for a home among those who inspected it. Both of the other bedrooms are cross ventilated and cheerful, and while the child's

room is small, it is equipped with a closet, over the stair landing, and will accommodate a small bed.

Many other features were used to show how attractively a home may be constructed. In the basement steel sash were used for permanence and to admit the maximum amount of light. A built-in incinerator cares for the garbage disposal problem. Hardwood floors were laid throughout the home and all of the closets are lined with aromatic cedar to prevent moths from making a feast on clothing. Every bit of equipment, all of the millwork and all of the finish which went to make up the attractive home was selected with care so that it might do its part toward making the home attractive.



Correct Width of Driveway

AN error was made in preparing the sketch used on page 165 of the February issue to illustrate the proper method of laying out concrete garage driveways. The figures "68½ inches" should, in each case, have been "56½ inches." This distance, four feet eight and one-half inches, is the correct measurement from center to center of such driveway slabs as those shown in the figures at both the right and left of this sketch.



Convenience in the Kitchen Is One of the Striking Features of the Grand Rapids Home Sweet Home, Erected by Dick and William Rottschafer of the Standard Building Supply Company. No detail was overlooked in the effort to make the home appeal to all who visited it.

Telling the Public the Story

By JOHN H. LONGFELLOW

PROBABLY everyone who has seen construction work going on in the business section of a large city has noticed how it attracts the attention of the thousands who pass it daily and watch its growth from a mere hole in the ground to a completed building. It remained for owners of the new Olympic Hotel, in Seattle, Washington, to take advantage of the advertising value of this fact.

From time to time, during the process of erecting the new building, large signs, which could be read at a distance of a block or more, were placed at conspicuous points on the partially completed structure, to tell the public what the building was, how it was being built and how it would be used when completed. Each sign carried some message which was well worded to impress people with the fact that this would be a hotel to rank with the best of its kind, thoroughly modern, well built and designed to serve the public.

One of these signs read: "These giant trusses, 45 tons each, support the upper nine stories of the Olympic Hotel. Directly below is the ballroom, 116 feet long."

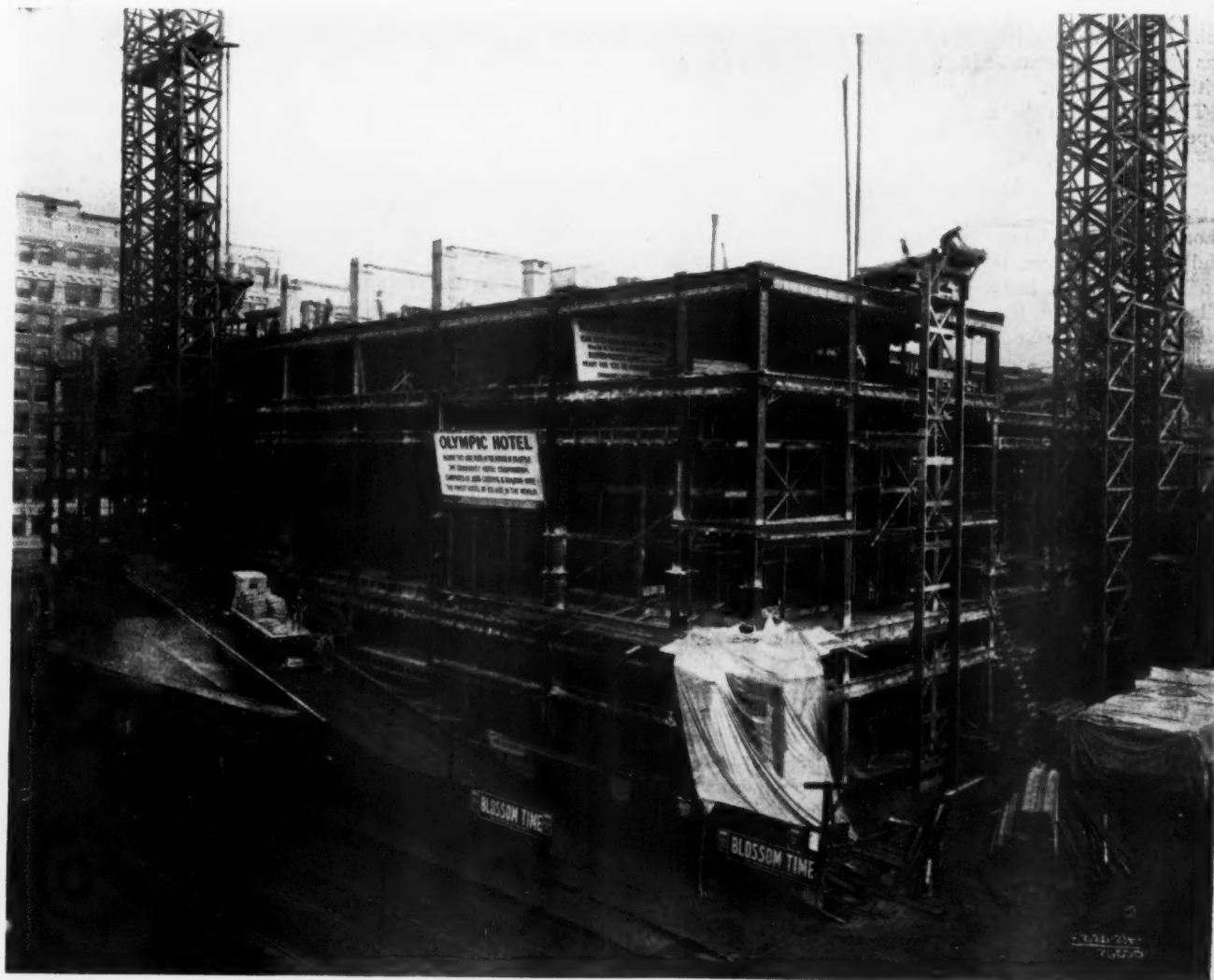
Another said: "Because they have faith in the future of Seattle, the Community Hotel Corporation, composed of 3,050 citizens, is building here the finest hotel of its size in the world."

Still another, on the east wing, announced: "Three hundred



The Completed Olympic Hotel, from a Drawing by the Architects, George B. Post & Sons, New York City.

more rooms can be built on this wing when required. At present 609 guest rooms will be completed. Below the trusses is the main dining room, with palm room and lobby to the left."



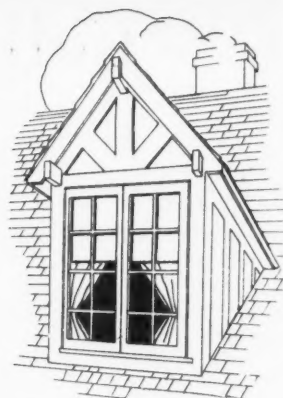
The Story of Construction and the Plans for the Future of the Building Were Told to the Public, During the Process of Construction, by Means of Signs Such as Can Be Seen in This Picture of the Partially Complete Olympic Hotel.



DETAILS of HOME BUILDING

by V. L. SHERMAN

Lewis Institute of Technology



Detail 1—Basement Windows

IN a recent discussion the question as to just what a "small house" really amounted to was glibly joined by "\$25,000." Of course, the answer was not quite fair, but to home buyers of unrequited dreams it seems true enough. Further discussion led to charm in the design of the really small house. Where does the money go?

Four years ago I tried to sell my wife a basementless bungalow and went so far as to plan the whole. But we compromised by excavating for a basement and putting the bedrooms above stairs. Likely most architects and builders effect the same compromises, but not always, unfortunately, before the batter boards are down. Perhaps being raised where homes had cellars but not basements has given me a fondness for low elevations. The city house with the basement dining-room irritated me.

Then, too, with the advent of the furnace came another type, on spiles. It is related that an irrational skipper brought his lovely boat into dry dock, immediately cast anchor and went ashore in the small boat. Some hours later he returned to find the dock bailed out and the boat shored. Contemplating the excess freeboard, the red below and the gray above, he was struck with the beauty of it. So he built him a house on spiles (one foot excavation for bilge), red up to the gangway and gray above. Soon after a gale arose and his house, not being in a dry dock, lay over with the weather, the spiles let go, and Neptune (in the shape of a furnace) came up through the parlor floor to laugh at him.

Not all people like houses without basements, but the styles in architecture call for that effect at least. There is some question as to whether this low floor-line principle is really sound when building close to a thoroughfare or on small lots, since there is the danger of propinquity to the street and to other and larger buildings. Builders consider that, of course, but cannot always dissuade their clients.

These sketches are made to show some of the details in small house work that are worth consideration. Calculating to add charm, the small house, more than the larger one, is apt to run into appurtenances, really impertinences, so the details must be thoroughly considered. The subject is basement windows. Their omission may be a striking feature in the common modern picture, but all houses cannot take sunlight through unseen rear windows. These basement windows are to go into the rear side, an approach shot. The question is, can we hole out. Certainly.

The house in the upper right hand corner illustrates a common condition in well-timbered towns where the grades are natural and rolling enough to permit such building. Providing the composition is carried to the level of the basement window sill, eliminating that below water-line appearance, the lines are not spoiled by windows showing at the low grades. This place, in block and added brick, is small and attractive, and provides an excellent basement.

But to add a negative in calculating, a frame house on the same grade would very likely carry the first floor joists on a ribbon. If this were done no pains should be spared to insulate the basement walls. An acquaintance once removed all the insulation from heating pipes in the basement of his home which was similarly built, assuring me that basement chill made the lower floors extremely cold.

The second house is low and not all excavated. The walls are shingle and the lines are northern. The two basement windows at the front are placed in a slight dip in the grade and directly below the casements. You will notice that the low eaves will counteract the extra visible basement wall and that the vertical lines at the garage front balance that.

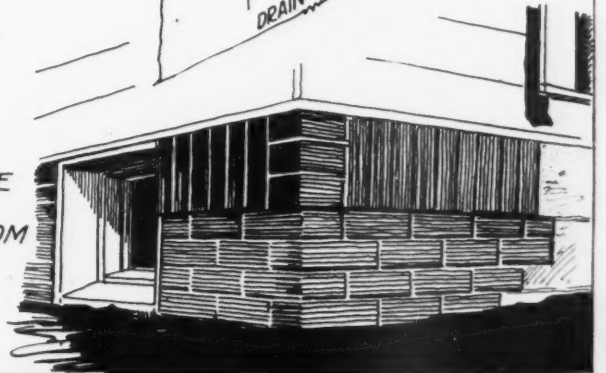
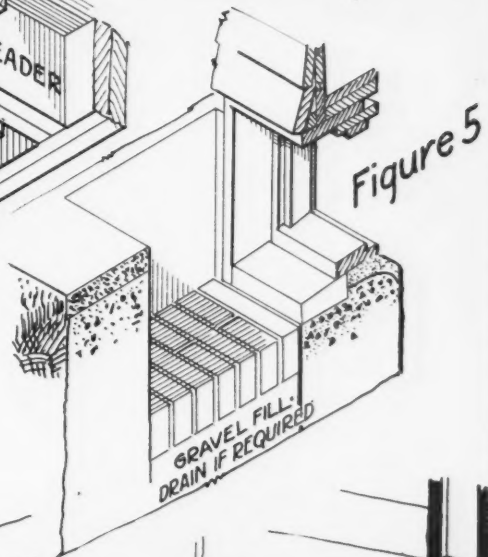
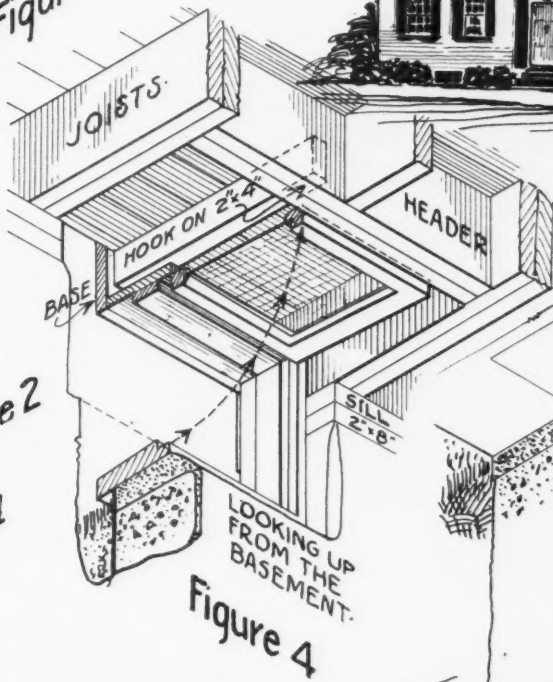
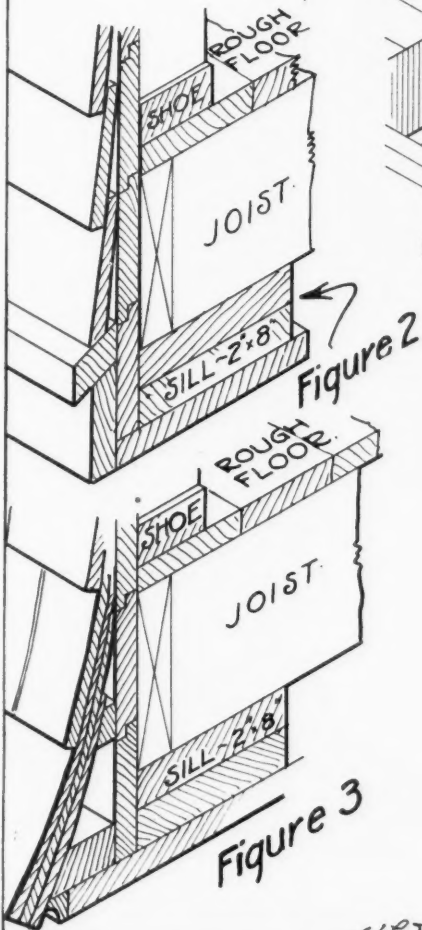
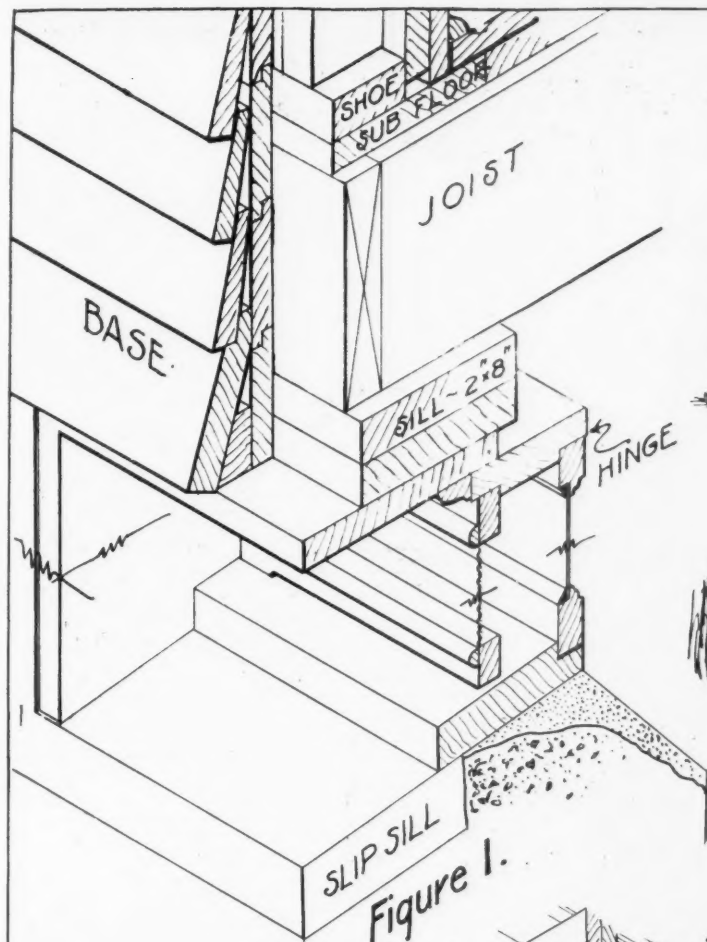
The lower house is an old-timer and one in which basement windows were not at first conceived. Yet the windows at the front of the house do not detract so much, and with the wide porch to lend breadth the floor-line could not well be lower and retain the eave line.

These three houses are real houses, they are not spoiled by basement windows, and there are plenty of other houses just as well brought up. In the first the house wall goes to the grade and includes the window. In the second and third the *baseline is unbroken* though interrupted by grade or shrubs. That may account for it. Suppose the construction shown in Figure 4 had been used. This would have brought the floor lines lower but the cut base lines would have been a great mistake. The header construction should not be used where a broken base line is conspicuous.

In case the elevation of the house prescribes no visible basement windows, areas ought to be used. Basements should be ventilated and given at least some sun. Figure 5 shows an area. Its makeup may vary but give plenty of space before the window. The area should be neat and unless protected should be well drained. A grating, bought or made of rod and bar, may be sunk in the coping, or attractive palings used. For safety sake, and children, the first is better. For myself I could get along better without the basement than with the areas.

Simple box sill construction is shown above the windows. For neatness and cheapness it seems to be the best. Some see an apparent lack of anchorage. When the question arose in my own case I resorted to the theories of mechanics, wind pressures, side wall areas, projected roof areas, centers of gravity, moments of force and so on. Theory proved, in my case, and the premises are still sound, that even a wind velocity of eighty miles would have no effect, and that is 30 pounds per square foot on the walls of an unanchored frame house. Only one reservation is made. A house exposed and in a territory of high winds is better built if the sheathing is diagonal.

(Continued to page 200.)



RELIEVING THE
CORNER TO
DISTRACT FROM
THE WINDOW.



There Is a Simple Dignity About the Entrance to Westmoreland Place, in Richmond, Va., Which in no Way Detracts from Its Atmosphere of Warm Hospitality, While the Shuttered Windows of the Second Floor Add to the Homelike Effect of This Beautiful Southern Residence. L. T. Bengston, Richmond, Va., architect.

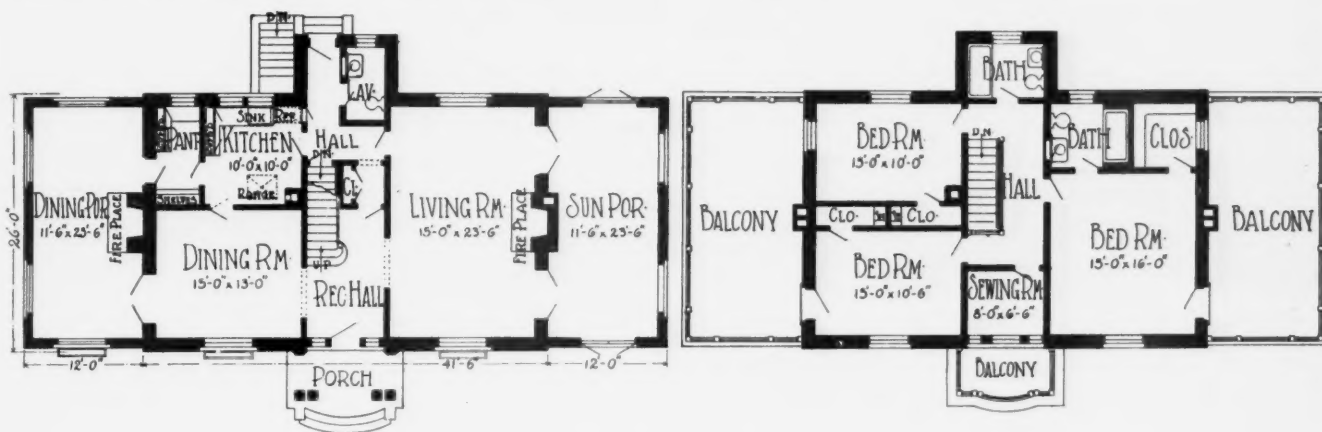
Westmoreland Place Displays the Perfection of Simplicity

L. T. BENGSTON, Architect

A NY designer who depends upon unornamented perfection of line for the achievement of beauty undertakes a most difficult task, but when his undertaking is successfully accomplished the result offers a permanency of satisfaction which is unsurpassed. Westmoreland Place, the beautiful new residence of Doctor Gatewood, of Richmond, Va., is an unusually fine example of true harmony

of line in the design and building of a home.

Every unit is perfectly balanced so that there is no jarring note in the entire effect. Practically the only ornamentation is found in the panels in which the windows are set and the entrance. The window panels, too, offer more in respect to line than in actual ornament and there is nothing ornate about the entrance.



Westmoreland Place Is Approached by a Circular Drive Leading Up to the Welcoming Entrance Shown on the Opposite Page. As the floor plans show, the interior possesses an air of spaciousness while providing every comfort and convenience for the occupants. The architect was L. T. Bengston, of Richmond, Va.

Broadcasting a Service Story



Above: Elmer D. and Paul W. Luhring, President and Secretary-Treasurer of the Luhring Lumber Co., Prepare to Tell Their Story in an Eight-Page Edition of the Evansville, Ind., Papers.

Right: The Lumber Yard with Private Switch Reduces Costs by Eliminating Much Handling.

Below: A Completely Equipped and Furnished Suite, Living Room, Dining Room, Bedroom and Kitchen, in the Display Rooms Aid in "Shopping for Homes."



The Illustrations on This and the Opposite Page Formed a Part of the Service Story Which the Luhring Lumbering is serving to bring the company into a closer contact with the public and

to Prospective Home Builders



Above: Display Rooms Contain Every Item Which Enters Into Building Construction. Here is seen the paint display, with order department, and executive and estimating offices at the rear.

Left: Lumber for Every Kind and Design of Construction Is Always Available in the Warehouses.

Below: Eight Trucks and Three Service Cars, Kept in Constant Condition by an Expert Maintenance Man and Supplemented by Two Horse-Drawn Wagons, Afford Quick Delivery Service.



Co. Recently Told in an Eight-Page Edition of Each of the Daily Papers of Evansville, Ind. This aggressive advertising is adding materially to the already remarkable growth of this business.



HOMES in COLORS

The Movies are Molding Home Building Tastes

By WILLIAM A. RADFORD

*President and Editor-in-Chief
of American Builder*

THE three M's, Magazines, Motors and Movies are the great educators of today.

We are getting our advanced ideas—all of us—from what we see pictured in publications, what we see as we drive along the highways, and what we see on the silver screen.

The building industry can thank moving pictures for putting over the idea to the American public of better design for the outside of houses and bigger rooms, spacious interiors and a richness of furnishings for the inside of the home.

We are not in favor of all that the movies teach, but we must admit that as molders of public taste in architectural matters and in home furnishings, the moving pictures have done a fine job.

As a builder, examine the next picture you go to see. Notice the architectural forms that make up the background of many of the scenes. Notice the rich—not to say elegant—furniture, draperies, etc., which establish that atmosphere of sumptuousness which the movie directors

seem to prize so highly. The heroine is a poor girl and is down to her last cent, but just the same her apartment or home is pictured with furniture and home accessories worth several thousand dollars!

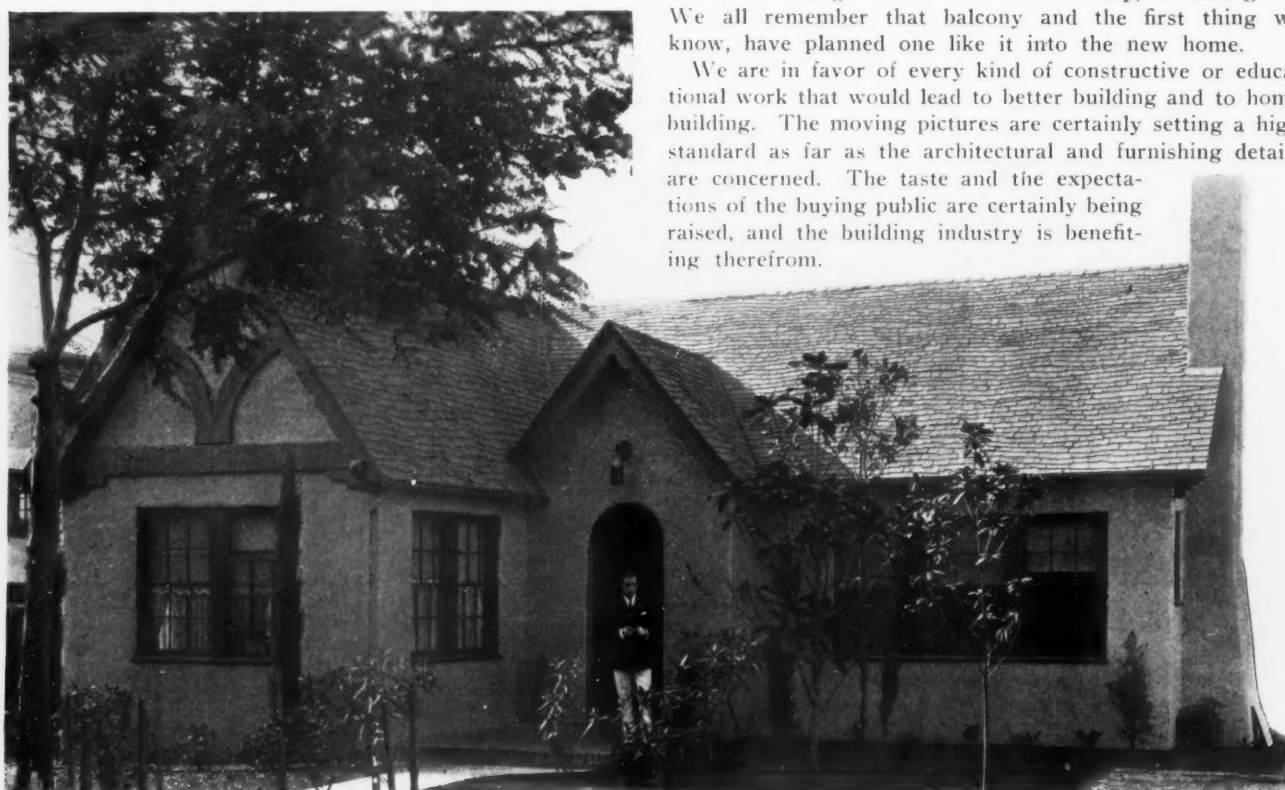
And the high society films!—there is no way of estimating the cost of the elaborate trappings which go to make up these pictures.

Architectural taste is being developed by these pictures. Everyone sees them, rich and poor alike, and although it does cause some envy and heart-burning, we must admit as builders that it is dissatisfaction with the old and the cheap that makes us business by causing folks to want to build and build better.

Of late we have been having a great run on Spanish designs. They come from California by way of Hollywood and the movies. Everybody sees them and wants them.

Studio-type living rooms—that is, living rooms two stories high or thereabouts—are also coming in. This is undoubtedly a movement inspired by the moving pictures. They have such an air of spaciousness. And when Douglas Fairbanks swings down off from a balcony, it looks great. We all remember that balcony and the first thing we know, have planned one like it into the new home.

We are in favor of every kind of constructive or educational work that would lead to better building and to home building. The moving pictures are certainly setting a high standard as far as the architectural and furnishing details are concerned. The taste and the expectations of the buying public are certainly being raised, and the building industry is benefiting therefrom.



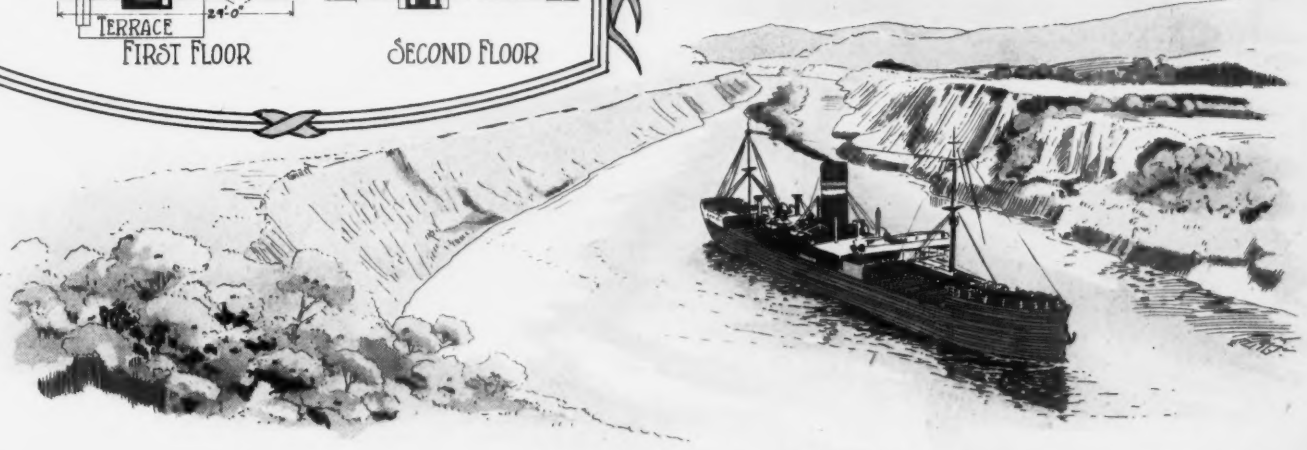
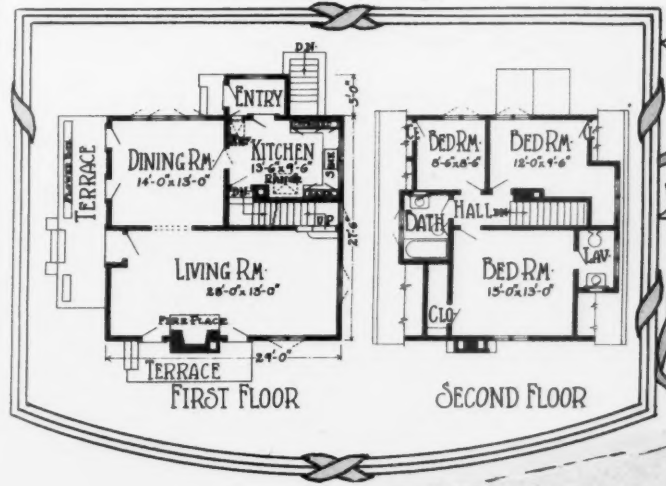
Rudolph Valentino Outside His New Dressing Room Bungalow on the Lot at Hollywood.



The GOODHOPE

AN English design in shingles. Six rooms, size 29 by 27½ feet. A design in the best of taste and embodying the very latest ideas. Color sketch to right suggests attractive bedroom furnishings.

Pat. March 15, 1921 and Sept. 30, 1924. Copyright 1925,
Wm. A. Radford, Chicago.

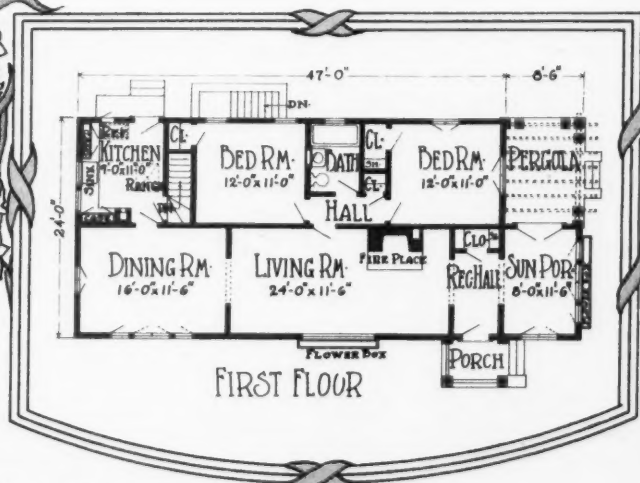
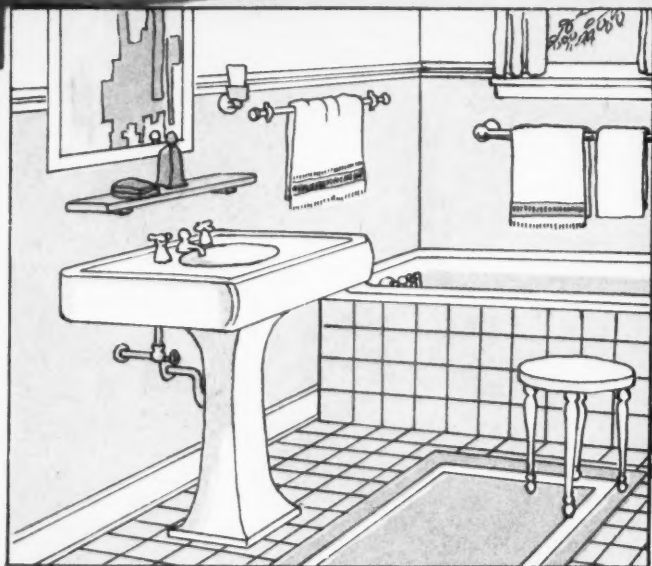


Panama Canal Opened to Commerce, August 15, 1914.



The GLENCOE

A delightful Colonial bungalow in the newest vogue. Five rooms and bath, also attractive sun parlor. The house proper measures 24 by 47 feet. Color sketch to left shows tiled bathroom.

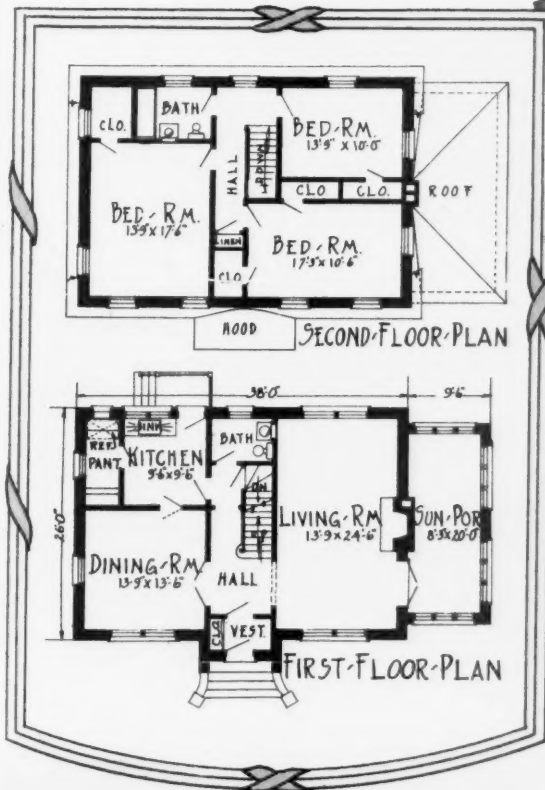


General Funston Captures Aguinaldo, March 23, 1901.



The GROVELAND

A SUBSTANTIAL Dutch colonial home in brick, containing six fine rooms and the large sun porch. Color sketch at right suggests the attractive stairhall.



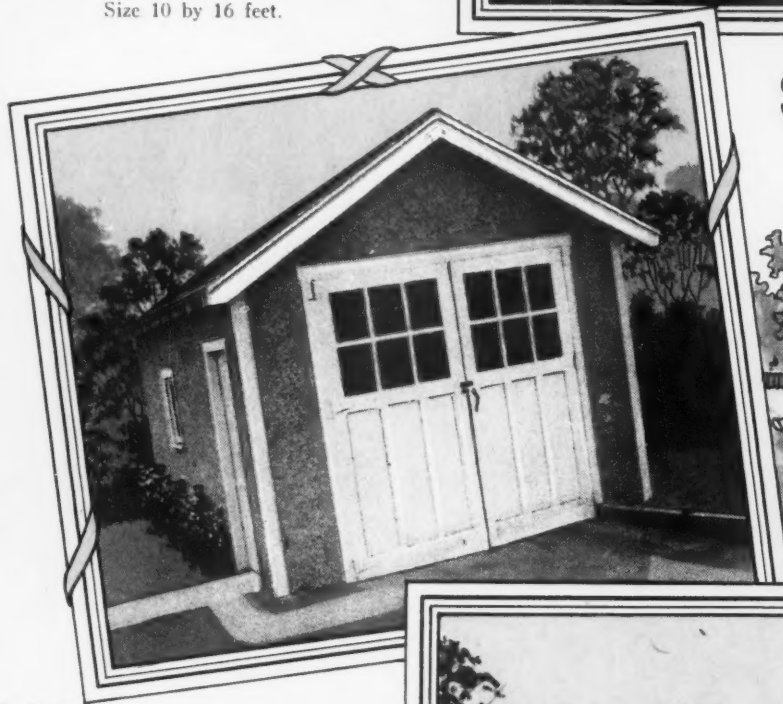
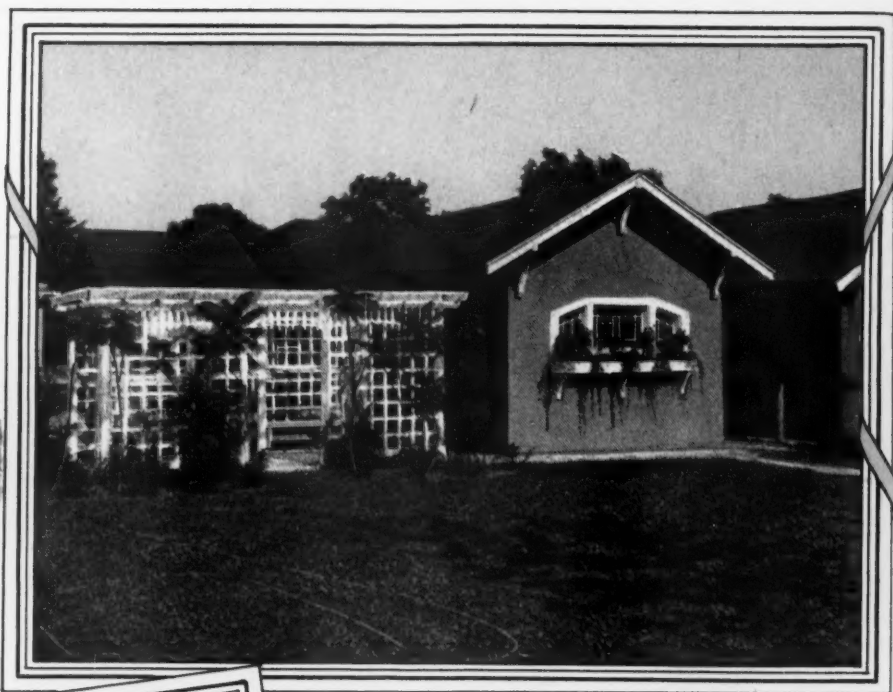
Wm. Penn Founds Pennsylvania, 1681, On the Principles of Fairness and Brotherly Love.



Below:

The GEM GARAGE

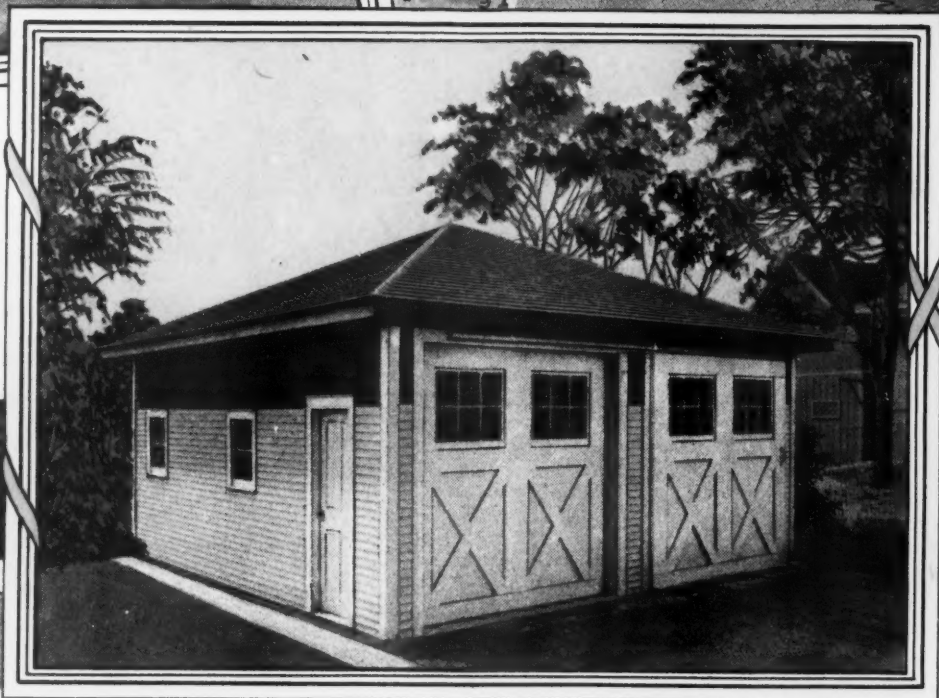
Size 10 by 16 feet.



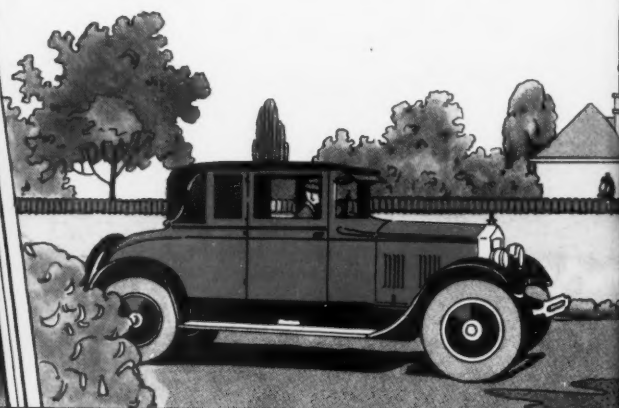
To Right:

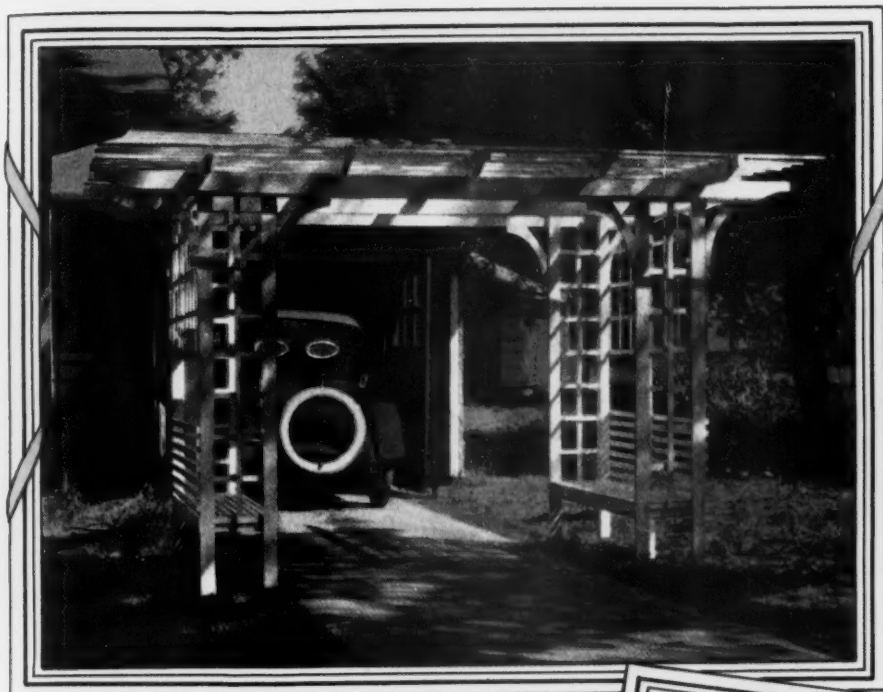
The GATES GARAGE

Size 20 by 20 feet.



SUGGESTIONS FOR





Below:

The GALVA GARAGE

Size 11 by 18 feet.

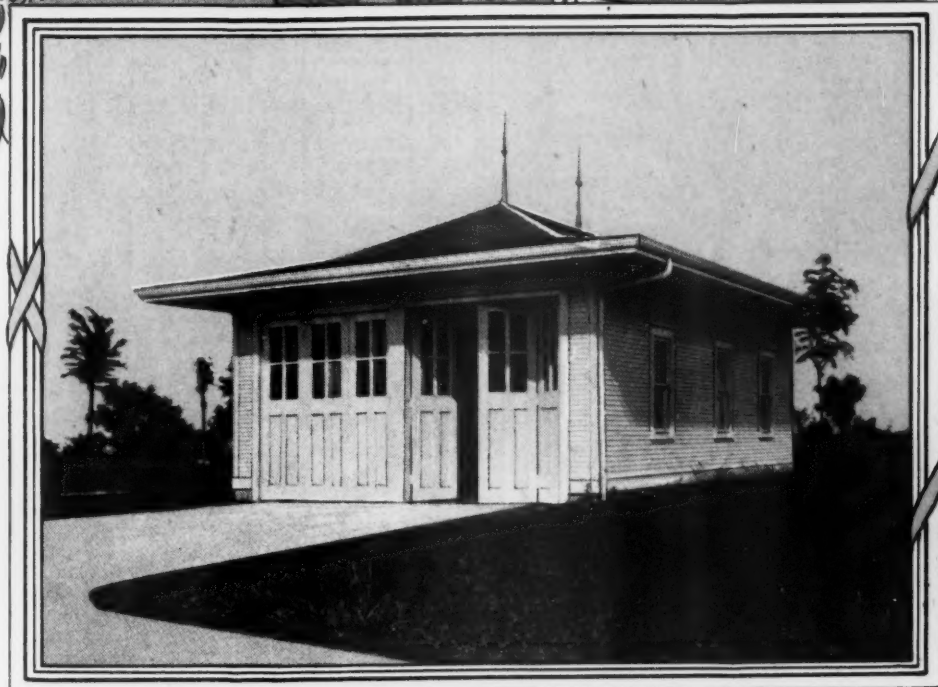
ATTRACTIVE GARAGES



To Left:

The GIBSON GARAGE

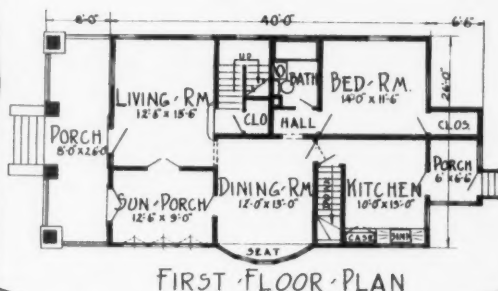
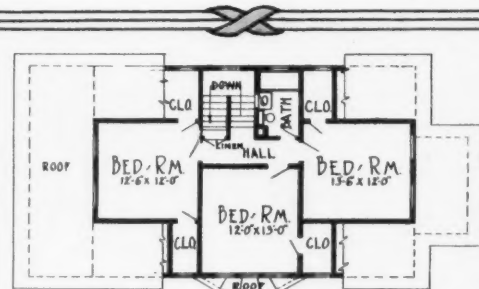
Size 20 by 24 feet.





The GRANVILLE

A POPULAR western bungalow, 26 by 40 feet, containing seven fine big rooms, two baths and a solarium or sun porch. Color sketch at left shows a glimpse of this sun porch from the well arranged living room.



FIRST FLOOR PLAN

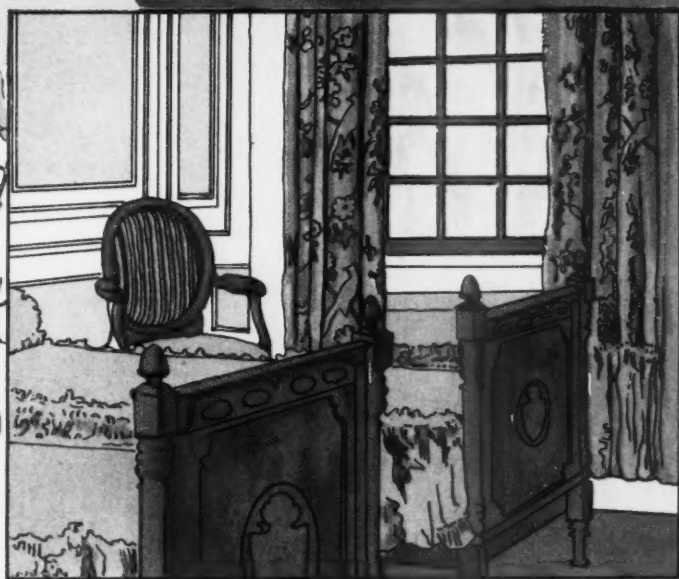
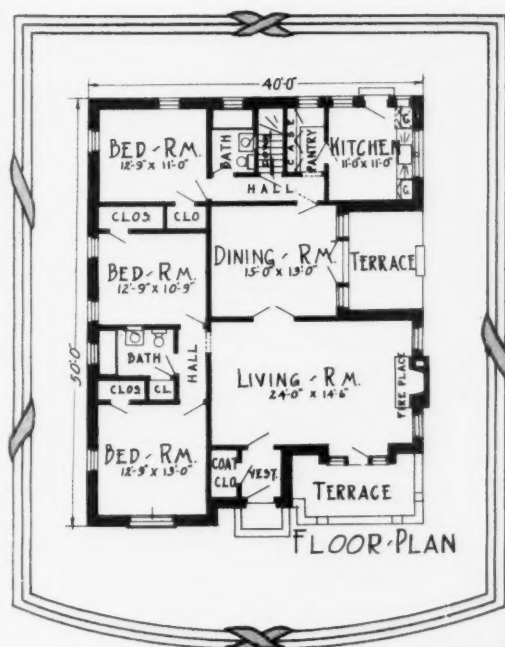


Louisiana Purchase, April 30, 1803.

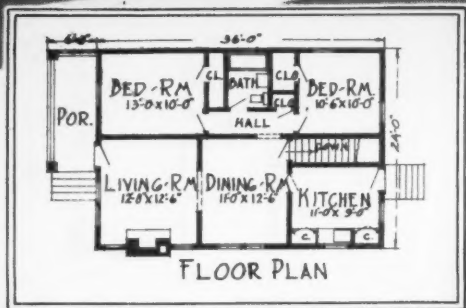


The GRANADA

A SPANISH gem—practical and not too large—six rooms and two baths in 40 by 50 feet. Color sketch shows bedroom furnishing suggestion.

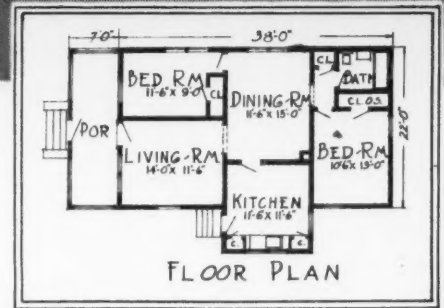


The Rough Riders at San Juan Hill.



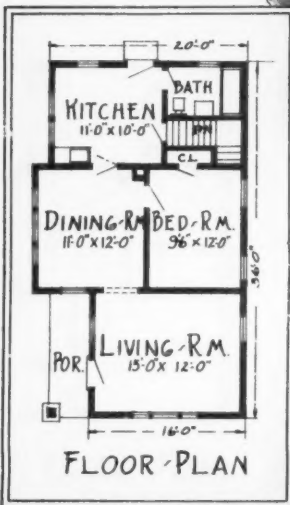
The GARLAND

Five Rooms;
Size 24 by 36 feet.



The GAYLORD

Five Rooms;
Size 22 by 38 feet.

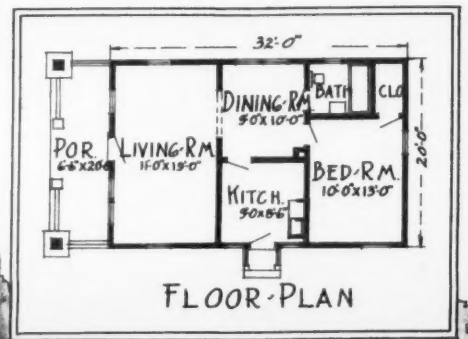


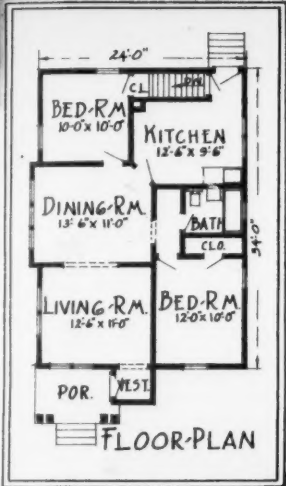
The GRETNA

Four Rooms;
Size 20 by 36 feet.

The GRAHAM

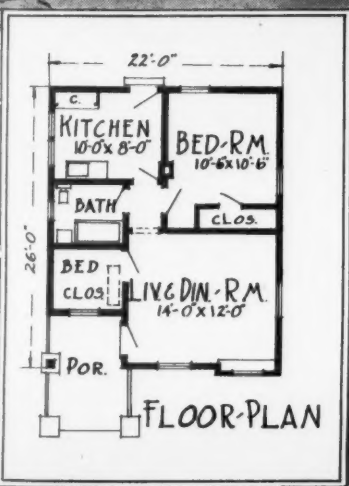
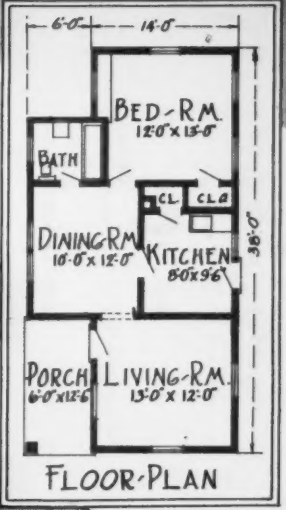
Four Rooms;
Size 20 by 32 feet.





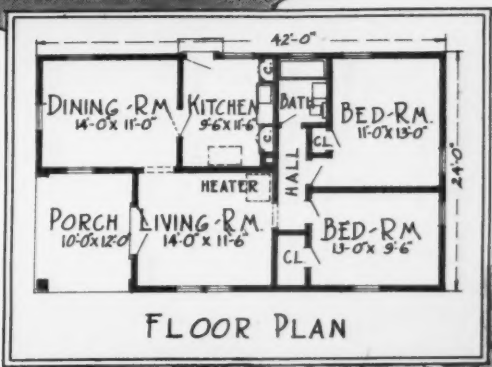
The GARDNER
Five Rooms;
Size 24 by 34 feet.

The GLENDALE
Four Rooms;
Size 20 by 38 feet.



The GIRARD
Three Rooms;
Size 22 by 26 feet.

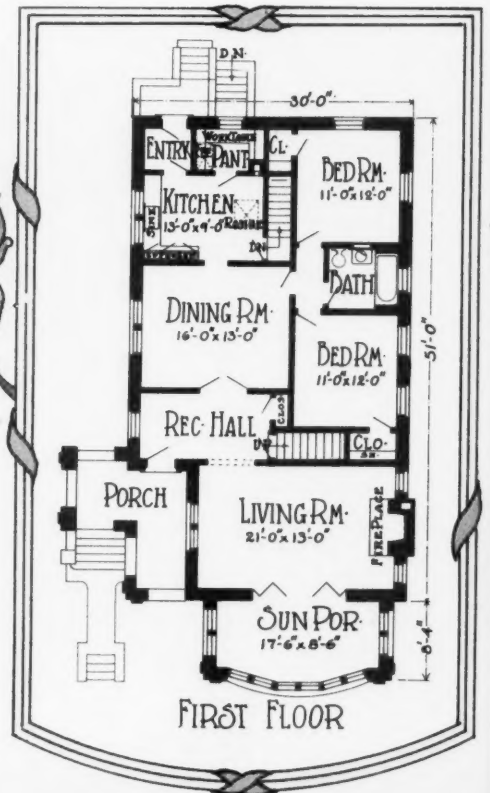
The GARFIELD
Five Rooms;
Size 24 by 42 feet.





The GLADSTONE

A VERY practical brick bungalow with big sun parlor; five rooms and bath, size 30 by 51 feet. To the left is suggestion in colors for attractive dining room.

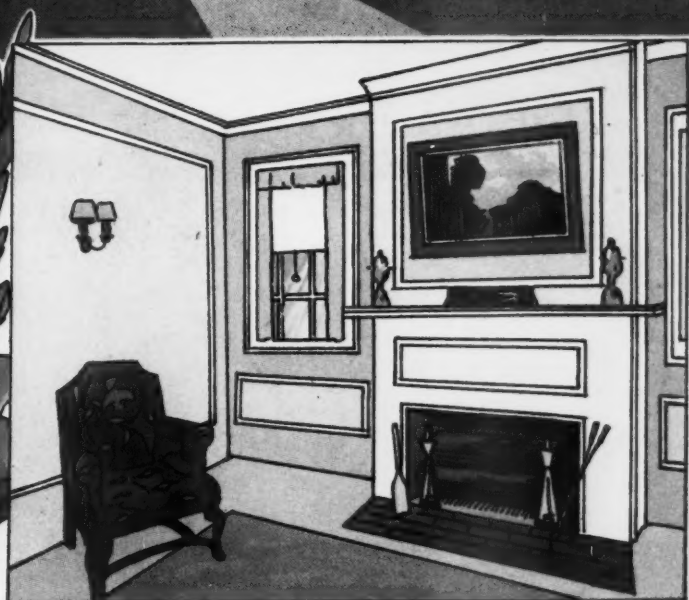
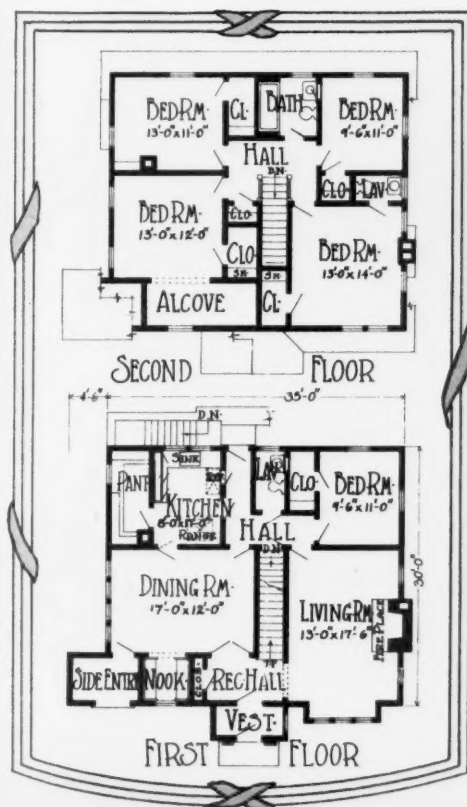


Joining the First Trans-Continental Railroad, May 10, 1869.



The GEORGETOWN

An English Colonial design containing eight rooms.
Size 30 by 35 feet. Color sketch presents suggestions for furnishing the living room.



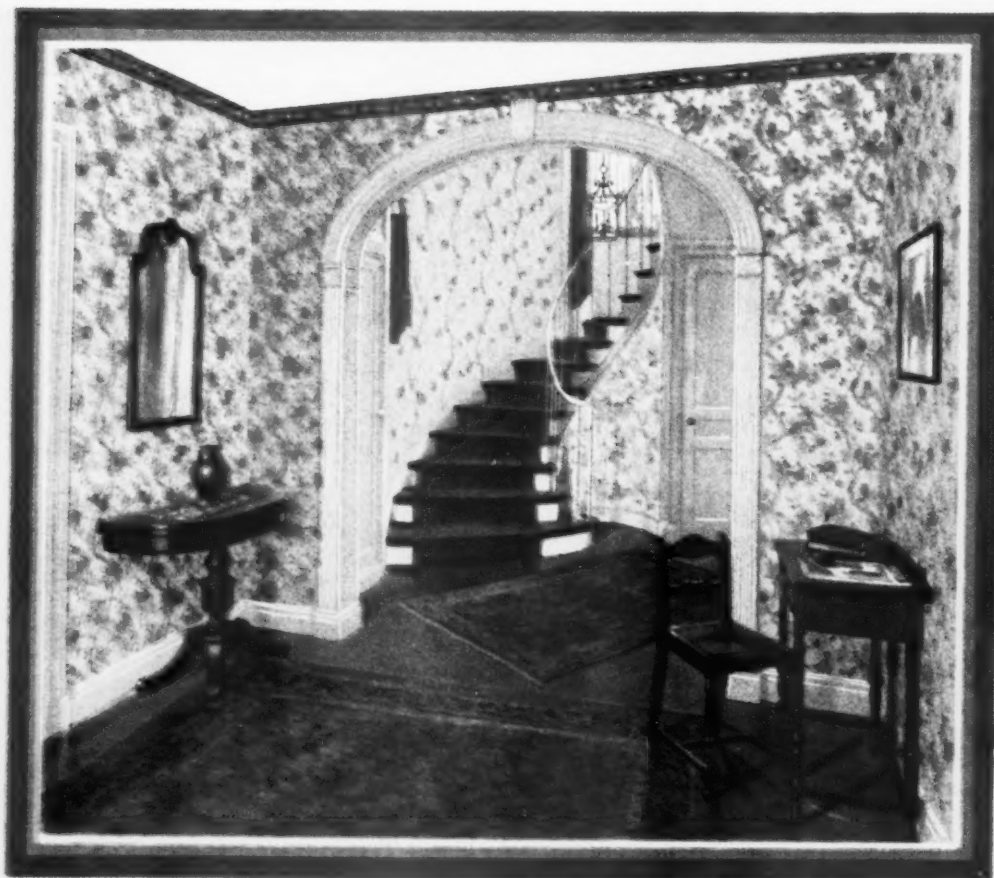
House of Burgesses, Jamestown, Virginia, June, 1619. The First Legislative Assembly in America.



To right, a cheerful dining room, prettily papered.



Below, a graceful Colonial reception hall with attractive wall-paper.





To left, a bedroom of homelike charm.

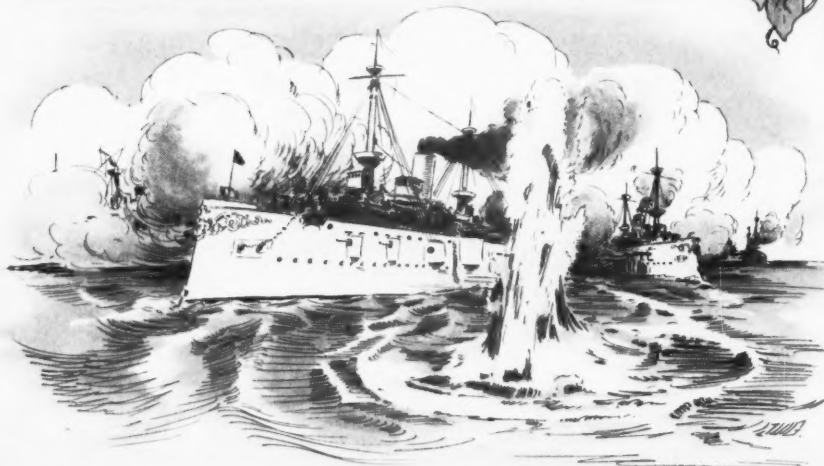
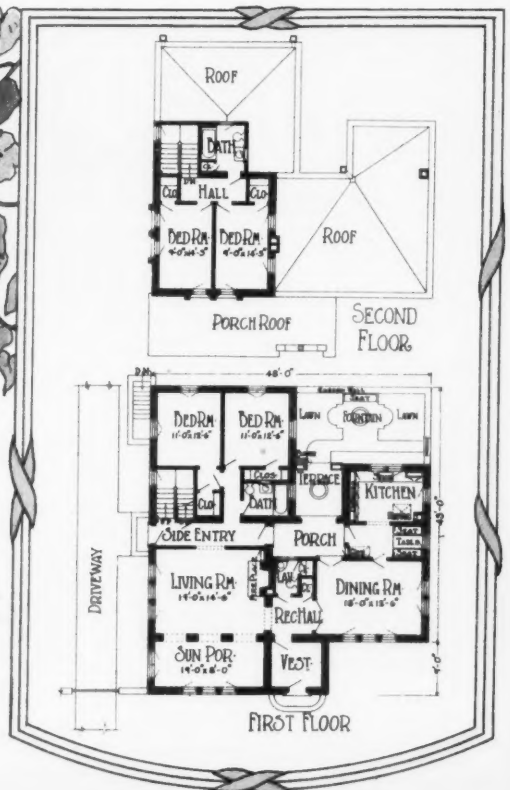
Below, a living room made interesting by well chosen furniture and harmoniously papered walls.





The GONZALES

SPANISH romance and distinction gather about this interesting home design. Seven rooms and two baths are provided. Dimensions of the house proper, 48 by 43 feet. Color sketch to left shows living room of Spanish flavor.

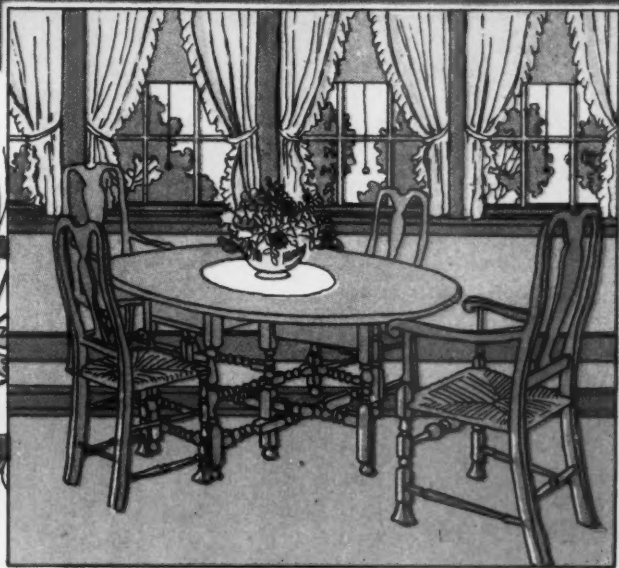
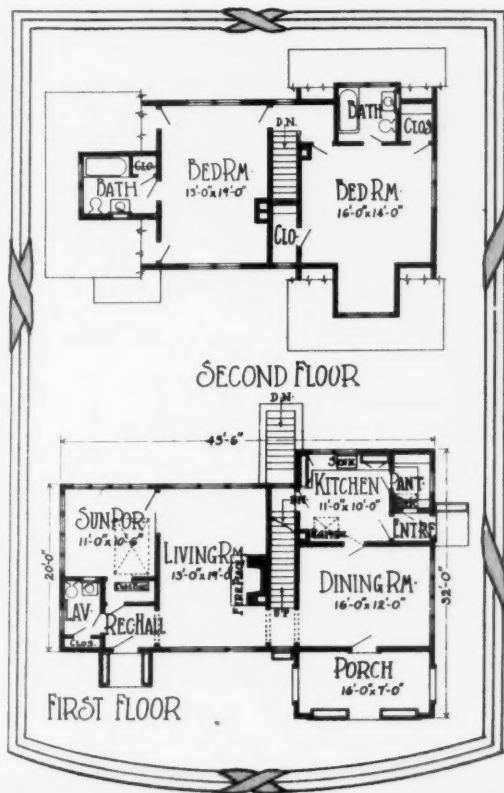


Admiral Dewey's Victory at Manila Bay, May 1, 1898.

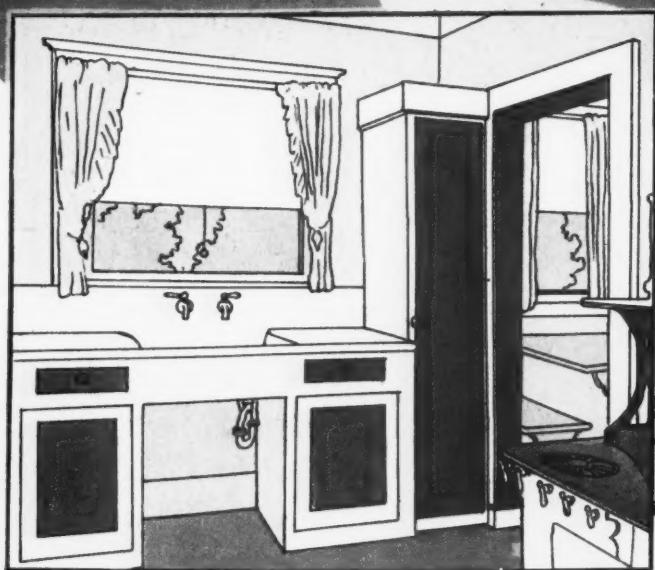


The GREENDALE

A COMFORTABLE stucco home of English lines and distinctive arrangement. Two big bedrooms each with private bath upstairs, and a third sleeping room on the first floor by means of a disappearing bed for the sun porch. Color sketch to right suggests modern dining room furnishing.

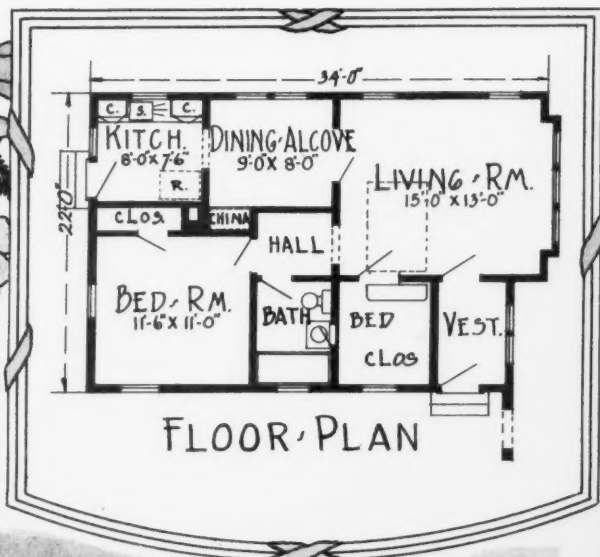


Commander Peary First to Reach North Pole, 1909.



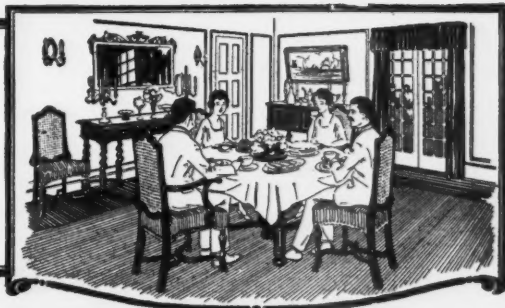
The GARDEN CITY

A CLEVER shingled cottage, *multum in parvo*, much in a little space, both of good looks and livable convenience. The disappearing bed in the living room with attached dressing closet provides the extra bedroom. Color sketch suggests the convenient kitchen.



First Coinage in America, Massachusetts, 1651.

OUR FRONT COVER HOME



Charming Home of Dutch Colonial Design Gives Seven Well Arranged Rooms in Space 32 x 39 Feet

THE charm of the Dutch Colonial or gambrel roof style comes from its low, broad lines. In this Front Cover Home, illustrated so strikingly in full colors on page one, and in the photograph below, the side walls run straight through to the upper eaves. The lower eaves coming between the first and second floor windows are simply nailed on without serving any structural purpose. They are for design only and serve effectively to produce that low, broad effect which is so much desired. The same can also be said of the roof projection at the gable ends. The front and rear walls carry right through to form the sides of the roof dormers. In other words, this is a straight gable house as far as construction is concerned, with a Dutch Colonial necklace hung around it to give it grace and beauty.

The room arrangement makes good the interesting

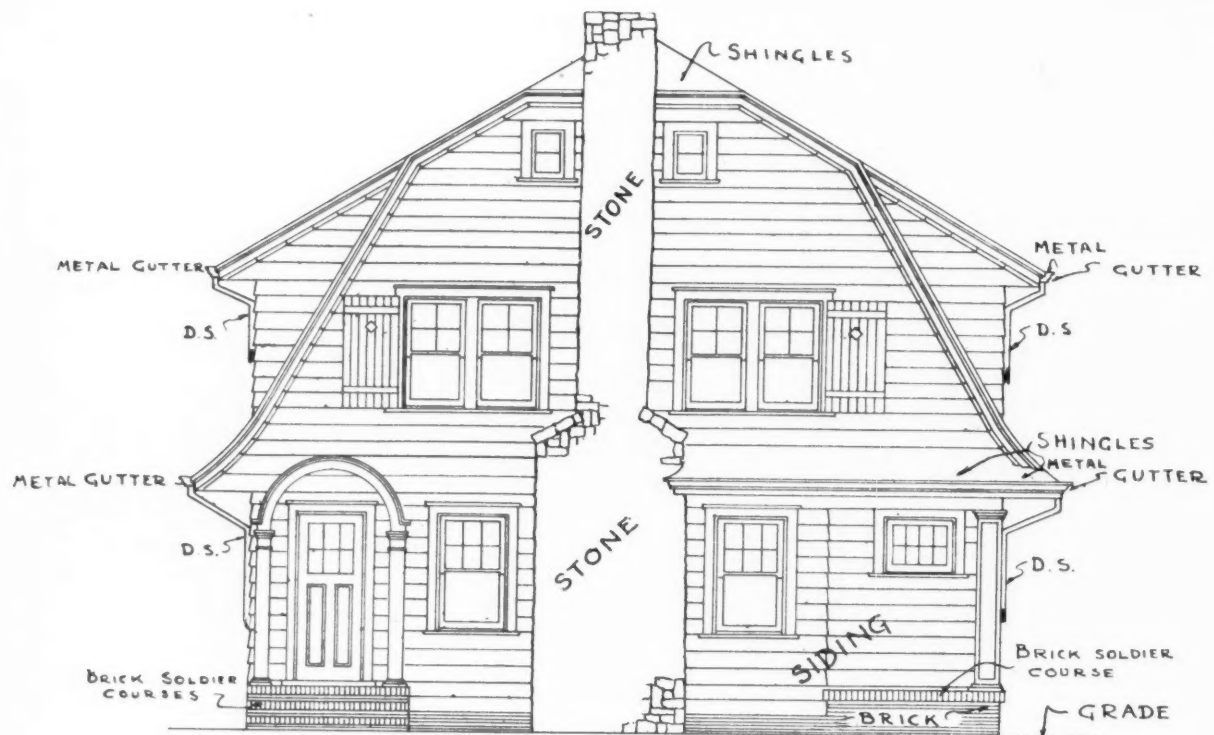
promise of the exterior. The living room and dining room are of generous size and well placed. There is a cheerful little breakfast room and an efficient small kitchen. The maid's room and bath on the first floor are exceptional features in a house of this size. The stairway is given an inconspicuous position and leads up to a central square hall communicating with three large bedrooms, and a sewing room. Two bathrooms and three clothes closets are provided.

A basement is excavated under the entire house; and is arranged for laundry, home workshop, heating plant with fuel storage and a separate cold room for fruit and vegetables.

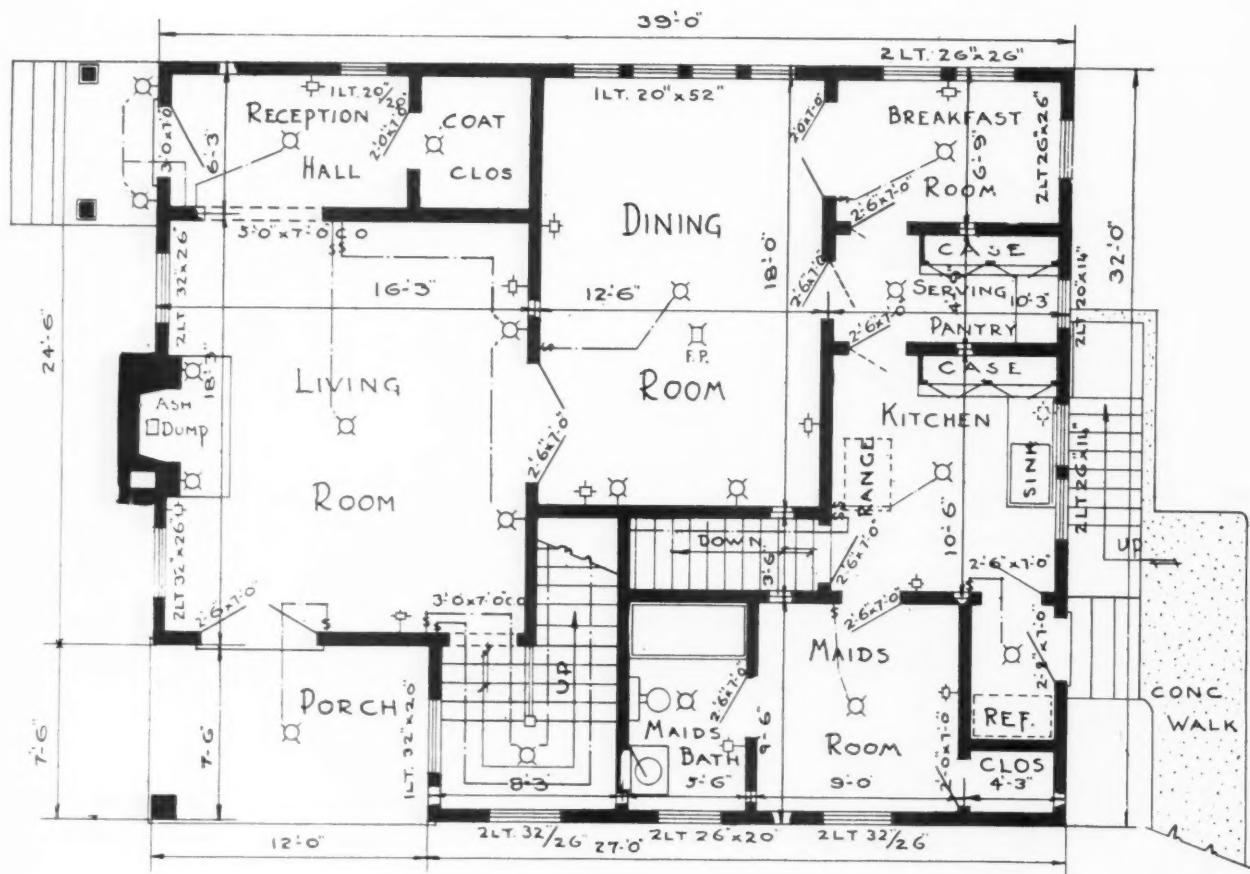
On the four pages following, working plans, one-eighth inch to the foot, are presented, showing in detail the construction of this Front Cover Home.



Working Plans and Construction Details of This Attractive Dutch Colonial Home Are Presented on the Four Pages Following.



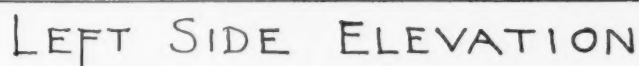
FRONT ELEVATION

SCALE $\frac{1}{8}'' = 1'-0''$

FIRST FLOOR PLAN

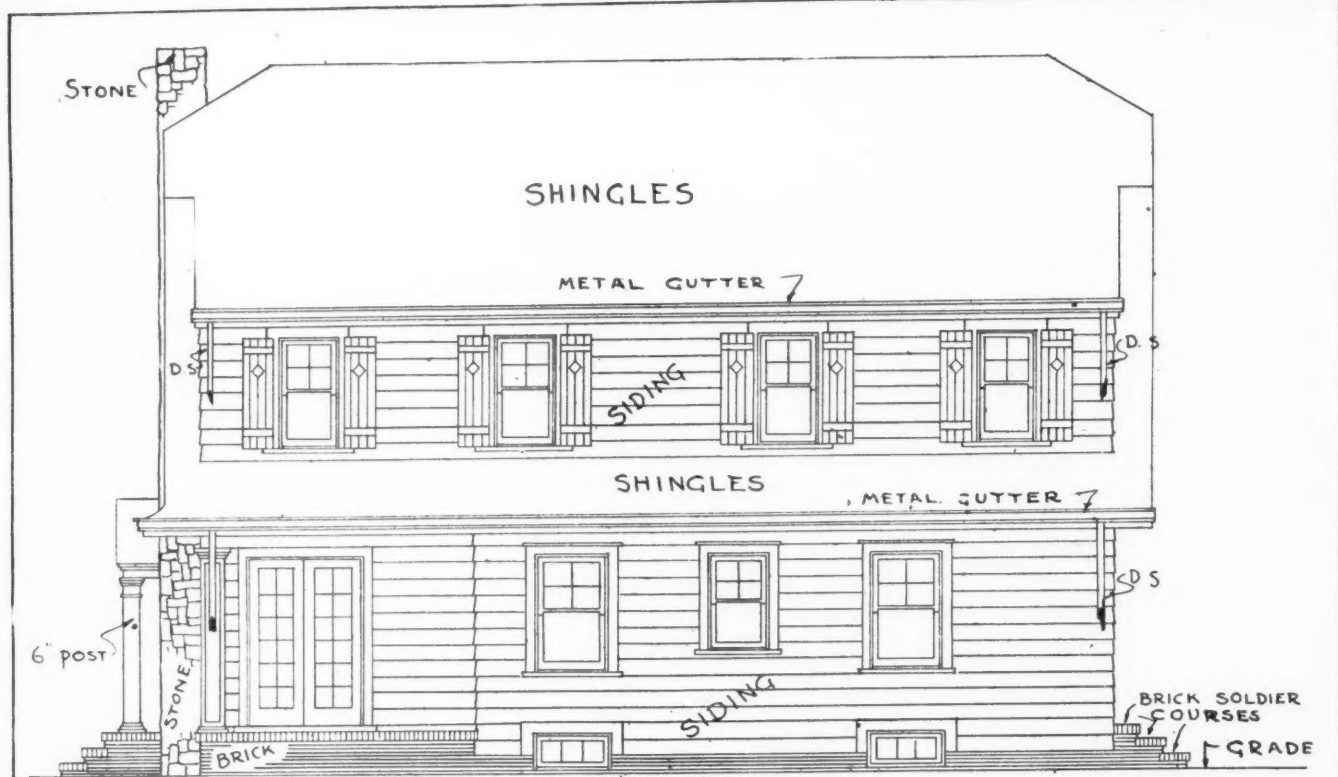
SHEET NO 1

Working Drawings to One-Eighth Inch Scale of First Floor Plan and Front Elevation of the Dutch Colonial Home Illustrated in Full Colors on Our Front Cover.

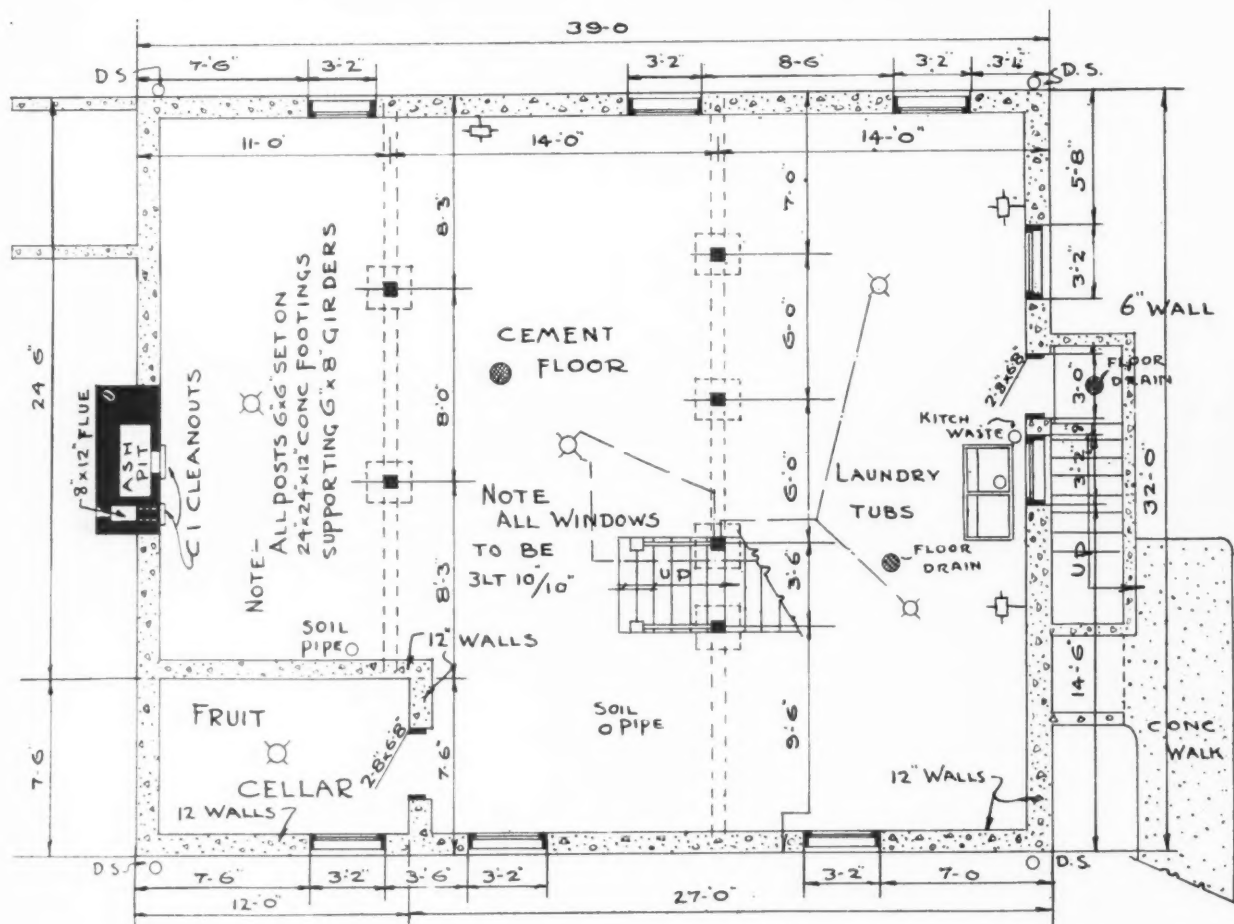


SHEET N°2

This Dutch Colonial Front Cover Home Measures 32 by 39 Feet and Contains Seven Well Arranged Rooms.



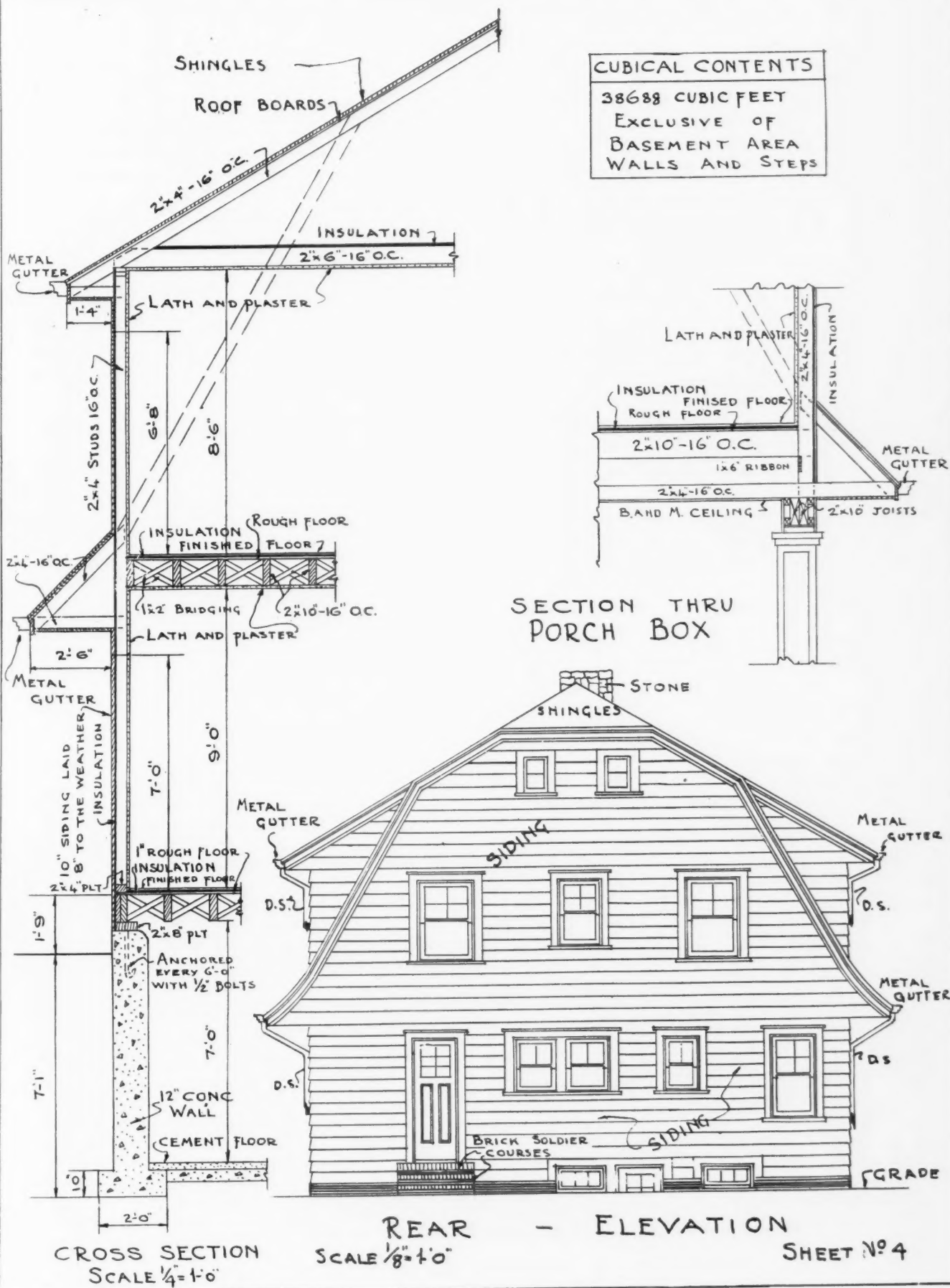
RIGHT SIDE ELEVATION

SCALE $\frac{1}{8}'' = 1'-0''$

BASEMENT PLAN

SHEET N^o 3

Basement Plan and Side Elevation of the Front Cover Home Show the Good Design of This Building.



The Good Construction of Our Front Cover Home Is Illustrated in This Cross-Section Detail, One-Quarter Inch to the Foot.



LANDSCAPE ARCHITECTURE AND THE HOME

A DEPARTMENT
CONDUCTED BY

F.A.CUSHING SMITH
LANDSCAPE ARCHITECT
CHICAGO



Fitting the Home to the Lot

This Is NUMBER TWO of a Series of Articles

By F. A. CUSHING SMITH, Landscape Architect

TO the home owner, and especially to one who owns a lot, however tiny the plot of ground may be, and who is about to build a home, comes a new undreamed sensation which stirs him as nothing else in his life has moved him. You who have gone through this experience know that in your haste to complete this home of yours you often hurry too fast in the preparation of plans, or perhaps you make no definite plans at all, at least until you have actually started the building. Without a studied plan no real progress can be made, and it is here that the architect can best realize your needs, and with patience and with due knowledge of your wishes mold the results into a home of which you will always be proud.

Relation of Rooms

Without in too much detail thinking of the plans and specifications, the elevations and style of our home (for within the covers of this magazine and within the brains of many architects are many splendid examples of home design) let us think for a moment of the rooms, their outlook, their relation and arrangement as they affect each other. The elevations and materials of construction really determine the architectural style or character of the final result. The plan may be ever so convenient, ever so well carry out your ideals, and yet due entirely to the elevations, the home into which you finally move may be far from your expectation of the home you had hoped for. Thus it is wise to study the probable future appearances of the house with the plan in mind, with the elevations shown from different points of view. A perspective study helps very much in arriving at the probable future appear-

ance of the house, but the writer has found that a model in clay or in other plastic medium, worked out carefully at a useable scale, will often make changes in the elevations seem wise and essential before the home is actually erected.

Divisions of the Lot

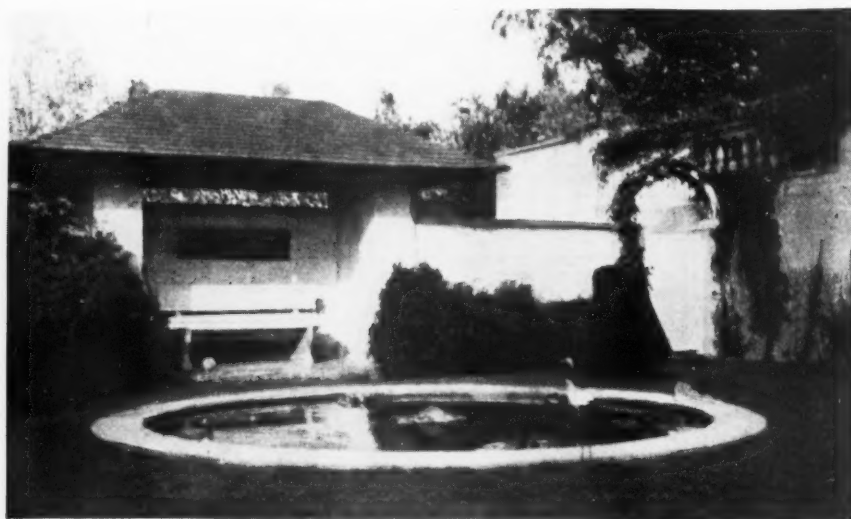
In a general way this lot of ours upon which we are to build our home, whether the lot faces north or south, east or west, falls into three divisions. There is that portion to the front of the house which is open to the public, an area which gives little if any privacy, and which, like our faces, is usually kept smiling, clean and bright to give our guests the happiest memories of their visit. Then there is that part of the lot which is so placed at either side of the building that by planting or by use of a lattice fence or by other methods, the area can be made partially private. The third section of the lot, which should be entirely screened from the street, is the one place which the owner, a mere man, can call his very own. Hence so far as is possible with the more or less crowded conditions of our suburban sections, he can proudly say that he is master of all which he surveys, to the fence enclosure. This area may be, and usually is, at the back of the house, which should make the study of that elevation of the building one of much thoughtful planning. Indeed it seems to the writer that instead of calling this the rear elevation of our home, we should think of it, should plan it, as the GARDEN elevation or GARDEN side of the house. Mayhap this would bring a new charm, a new lightness, a beauty and liveable gardenesque character to this, the living side of the home.

Location of Service Station

Too often to the rear of the house are relegated the most unsightly of the necessary service sections of our home, sections which could as well or better be placed at the side. I refer to the service entrance, from which ashes and other wastes of the establishment must be carried, where the foodstuffs are delivered, and through which the family washing is brought out into the sunlight of the drying yard. Where the garage is detached it would logically be placed at the rear of the lot, with a drive of adequate width, and a turn-around of sufficient size to permit of backing around upon your own lot.

Homes Crowded

Our great difficulty in America is that of placing a large home of sufficient area to care for the needs of the average family upon a narrow and



A Secluded Corner of the "Outdoor Living Room" with a Sheltered Bench on Which the Home Owner May Rest and Enjoy the Contact with Nature When Tired from Working Over the Favorite Plantings of His Garden.

oftentimes shallow lot into which our country and suburban sessions are being divided. Thus houses are placed close together, as close as fire risks will permit, in some cases so close that they lose their individuality as they march in close formation down the street.

Individuality

It is to avoid this monotony, this similarity, that heroic measures are at times adopted by our architects and builders to eliminate this tendency or at least to differentiate between the homes. It is only by designing our homes to fit the lot as well as the needs of the family that we can avoid the sometimes freakish results of the vain effort to have our home entirely different from that of our neighbors.

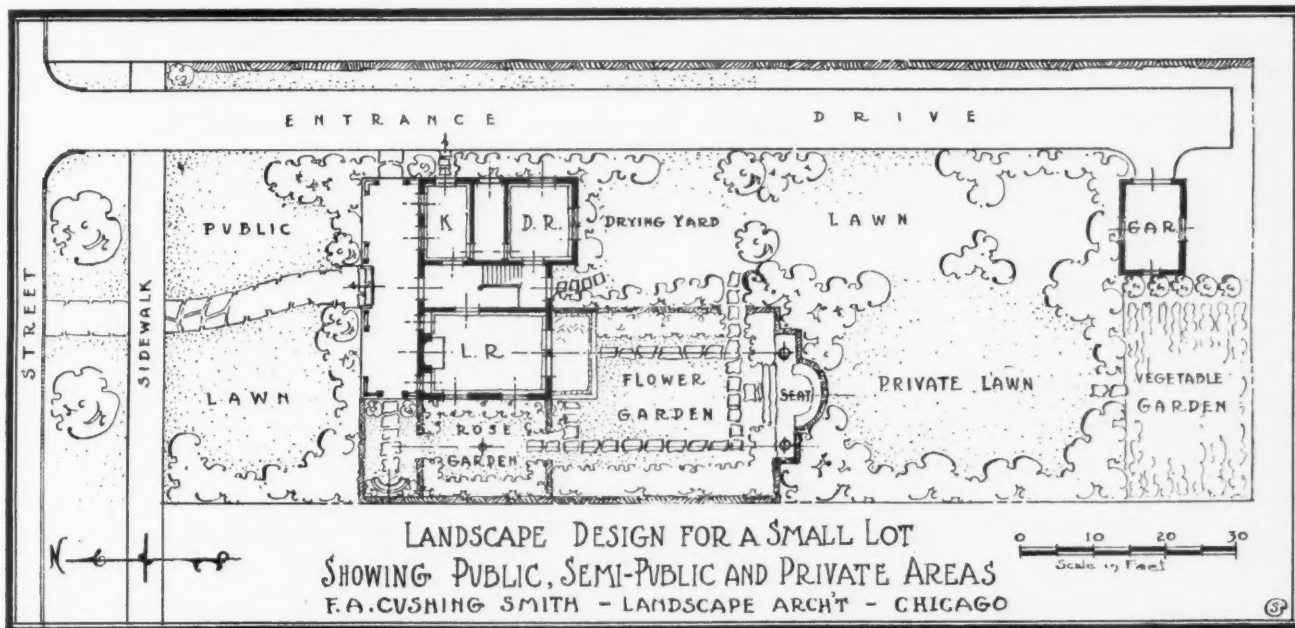
The Living Room

Turning now to the arrangement of the rooms for a moment, bearing in mind that we are to have a garden side to

for a tea-table and chairs, from which our garden may be studied and enjoyed. The terrace should be paved, or at least have stepping stone paths set in the turf, so that one may walk dry shod after a heavy dew or rainfall. The paving may be of brick, slate with its variegated colors or of other material which is in keeping with the architectural character of the house.

Dining Room

More and more, except in the larger homes, the dining room, once one of the important and carefully studied rooms of the entire home, is becoming less and less an essential. In the smaller homes, the bungalows and the cottages, the dining room has been entirely displaced by the dining alcove. The space before devoted to dining room may become a library, or a library and sewing room combined. The windows of the dining room should face east to give us a cheery start as the day begins.



The Public Parts of the Grounds Are Usually Kept at Their Best for Guests and Passers-by, but the Private and Semi-Private Parts May Be Equally Attractive and Justify the Term "Garden Elevation" to Replace "Rear Elevation," Thereby Adding a New Charm to the Home as a Whole.

our home from which the garden should be directly reached, let us strive to build our house around the living room, yes, about the fireplace of the living room as the heart of the entire home. The fireplace usually works out best if located at one end of the room, especially if the room is rather narrow, for this arrangement permits of the grouping of chairs, a sofa or other inviting group about that end. Wherever the fireplace is located take care not to have two doors leading into the dining room or into the hall or to any part of the house at either side of this retreat. The arrangement cuts in two or three parts the group that might have enjoyed the blaze and crackling of the logs on the hearth.

Sun Room and Terrace

The fireplace located on the north end of the living room which runs north and south will give the rays of the setting sun an opportunity to brighten the late afternoon hours and will permit of the south opening, through wide French doors, out upon a terrace, or even upon a sun room where in the winter the room is filled with blossoms. Here, too, is the transition from the more formal interior of the indoor living room to the less formal and more open outdoor living room—the garden.

Use of Terrace

Outside of the sun room or the garden end of the living room a terrace will give, upon its broad expanse, a spot

The kitchen, that necessity in every home of whatever size, should be so placed that the smoke and odors from the cooking foods are carried away from the rest of the house. Thus it would in many cases be at the northern end of the place, where the prevailing winds in our climate at least would blow the aromas away from the other rooms. The kitchen may very happily be designed toward the front of the house, especially if the house faces north, and there can be no possible objection to such a design. The service entrance may be at the side of the building, the drying room, and the service yard being enclosed within a lattice wall, a stone wall or a high hedge.

The Outdoor Living Room

Considering the outdoor living room on the garden side of the house, we want this room to afford us the same privacy which our interior living room gives. It would be preferably enclosed, whether of the formal or informal type, by lattice, hedge, wall or a combination of these materials. There might be a summer house, a pool with a fountain which quietly plays upon its bright surface. There would be seats, for the worker in the garden tires often in the labors of love in weeding the flower beds. The kinds of flowers, their color of bloom, their height and time of bloom, the varieties which look well together, the edging of the planting beds, all these factors enter into the successful outdoor living room. We will, in a later article, take up various details of the garden.

Sheet Metal Details

Sheet 6—Flashings Around Valleys and Gutters

EDITOR'S NOTE: This is the sixth of a series of articles, presenting authentic details for flashing and metal work problems in building. The drawings, presented on the opposite page, were prepared by the Copper and Brass Research Association, and may be applied in the use for all roofing metals.

The first of this series was published in the November issue

of the AMERICAN BUILDER. Readers will remember that the drawings are intended to show the details of construction for every trade involved and are suitable for use by the drafting room in designing details. The distortion of the drawings will be apparent at a glance, but this purposely has been done that the methods may be made more clear.

NOTES FOR DRAWINGS ON OPPOSITE PAGE

FIG. 32. When forming a "closed" valley with small sheets of metal the method shown in Fig. 32 is used. The size of the sheet to be used is determined by the length of shingle and the pitch of the adjoining roofs. Each metal sheet should extend 2 inches above the top of the shingle on which it rests so that the metal sheet may be nailed along the upper edge to the roof sheathing without the nails penetrating the shingles.

Each sheet should be long enough so that it will lap the metal sheet below at least 3 inches, but always set back of the butt of the shingle above so that the metal sheet will not be visible from the outside. Each sheet of metal will be separated from the sheet below by a course of shingles. (See Section A-A.) Each sheet must be wide enough so that the vertical distance from the bottom of the valley to a line connecting the top of the sheets (see Section B-B) will be at least 4 inches. The sheets of metal should be nailed only at the upper edge with copper nails and laid at the same time as the shingles.

Some roofers prefer to bend these sheets with a center "crimp" (see D-D, Fig. 33), thereby stiffening the sheet, forming a straight line to which to set the shingles, and preventing the possibility of water from one slope being forced above the flashing on the opposite slope when the drainage from one slope is greater than the other.

Fig. 33. Another method of forming a "closed" valley is shown in Fig. 33. In this method the metal is laid in long narrow sheets directly on the paper or felt covering the roof sheathing and before the shingles are laid. The metal sheets may be of any length desired, but the upper sheet in each case should lap the one below at least 4 inches, unless the lap is soldered, in which case the lap may be reduced to 1 inch. Each sheet should be nailed about every 18 inches along the outer edge of its long dimension, and be wide enough so that the vertical distance from the bottom of the valley to a line connecting the tops of the sheets (see Section D-D) is at least 4 inches. In laying the shingles on top of this flashing great care must be taken not to drive any nails through the flashing. The "crimp" as shown in Section D-D, Fig. 33, has its uses as explained in Fig. 32, but the flashing may also be made the shape shown in Section B-B, Fig. 32.

Fig. 34. Forming the gutter the adjoining flashing of a factory saw-tooth roof presents many problems. In order to obtain the maximum light and at the same time avoid any direct sunlight the roof windows are always placed facing in a northerly direction. This results in the gutter being always in the shadow and, in northerly localities, permits the snow to gather in the gutter for long periods.

The "line of minimum shadow" shown in Fig. 34 indicates the point down to which the sun shines on the slope of the roof. The area to the left of this line receives more or less sunlight according to the hour, and the area to the right receives none. This line as well as the angle of the face containing the windows varies with the design of the building and the latitude in which it is built. In every case the flashing should be carried up the slope at

least 1 foot beyond the minimum-shadow line and be fastened to the roof by cleats and also be carried up under the sills of the windows.

All sharp angles should be avoided in the construction of gutters, and in those over 18 inches wide a soldered lock seam should be formed lengthwise down the center to allow for expansion and contraction.

Gutters of this type are usually subject to hard treatment, as it is often necessary to shovel out the accumulated snow. When this is done the metal is often broken by the shovels or punctured by the heels of the workmen. To overcome this different schemes have been tried. Steam coils for melting the snow are probably the best. In every case there should be provision for quick drainage. Small electric heaters are sometimes placed at outlets. Sometimes a steel angle, about 5 inches by 5 inches, with edge notches, is placed inverted in the middle of the gutter. The water from melting snow flows through the small notches to the outlets, and the snow is kept drained.

If the gutters are to be cleared of snow by workmen with shovels, snow boards are absolutely necessary.

Two methods of flashing the ridge of a saw-tooth roof are shown in Fig. 34. The one at the left is for a shingle roof above a copper-sheathed wall and the one at the right for a shingle roof over a shingle wall. In each case the edge is turned back $\frac{1}{2}$ inch to provide stiffness.

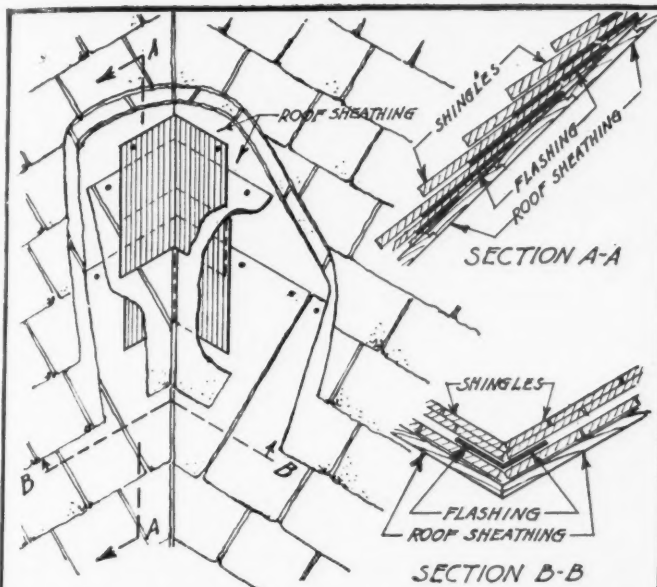
Fig. 35. In building a gutter for a saw-tooth roof it is very important to avoid all sharp bends of the metal, to avoid sudden drops, provide an easy flow for the roof water, and to carry the flashing high enough to avoid chance of overflowing behind it. Fig. 35 shows a gutter where many of these important features have been omitted. The short distance that the flashing has been carried up on the roof and walls is a constant source of leakage in case of the temporary stoppage of the gutter outlet. The sharp angles at the bottom of the gutter will be a likely place for a crack in the metal to occur and the vertical drop of several inches from the sloping roof to the bottom of the gutter will cause wear at the bottom of the gutter. All these points may be avoided by proper design.

Fig. 36. Another method of forming a gutter for a saw-tooth roof is shown in Fig. 36. Note that the course of the drainage water is changed gradually instead of abruptly, as in Fig. 35, that all sharp angles in the metal are avoided and that the flashing is carried up on the walls and roof high enough to avoid any chance of an overflow caused by stoppage of the leader outlets of the gutter.

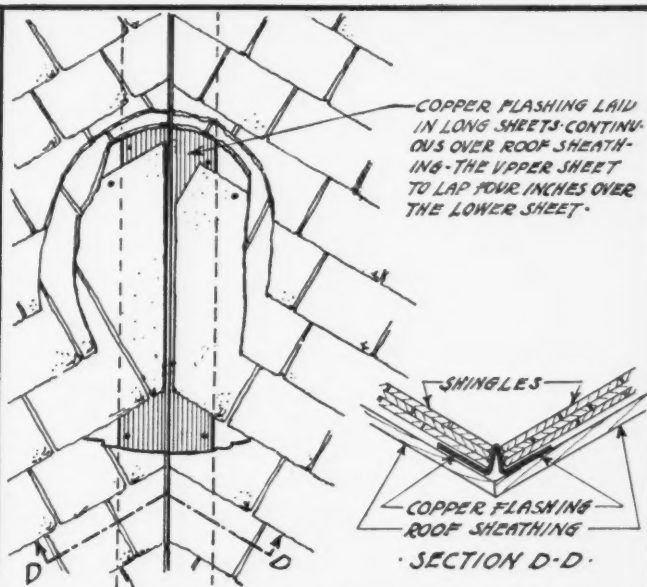


Code of Building Ethics

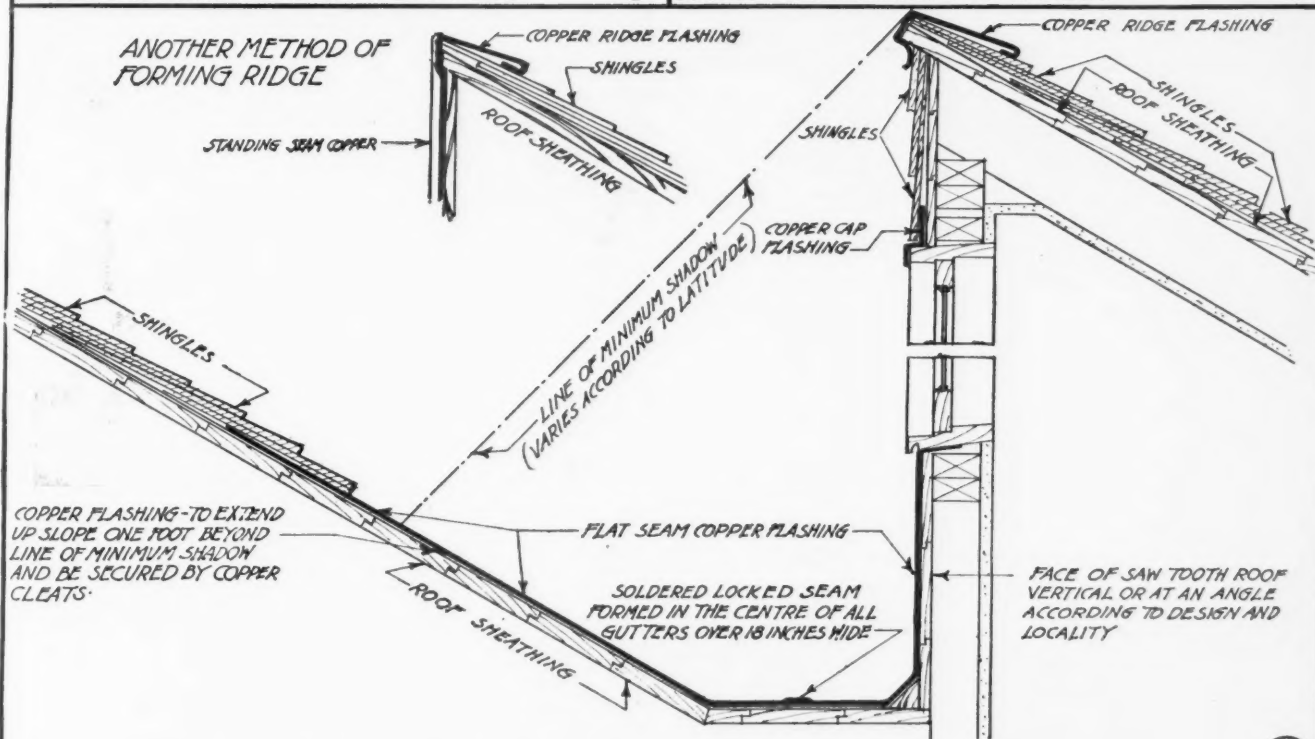
A CODE of ethics, covering the seven primary points of homebuilding as those points are brought out in Own Your Home expositions, has been formulated for the national circuit of such expositions licensed by the National Association of Real Estate Boards. With the purpose of these expositions in mind, this code lays down standards which all exhibits must meet in informing prospective home owners.



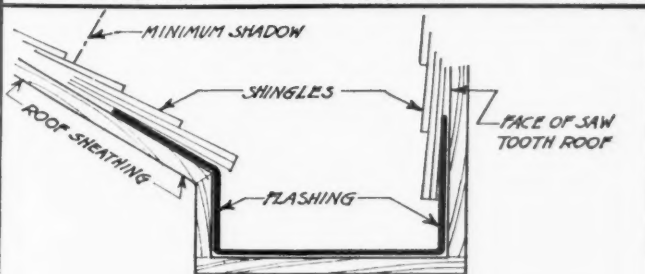
FLASHING FOR A CLOSED VALLEY USING SHORT SHEETS INTERWOVEN WITH SHINGLES (32)



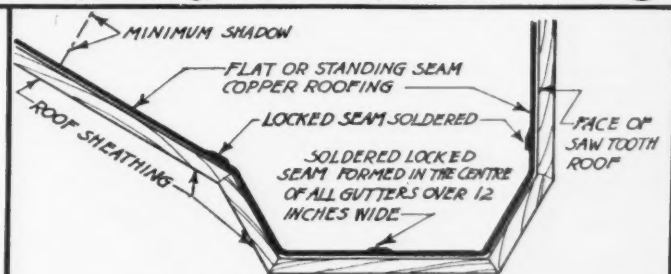
FLASHING FOR A CLOSED VALLEY USING LONG SHEETS UNDERNEATH SHINGLES (33)



CORRECT METHOD OF FORMING AND FLASHING GUTTER OF SAW TOOTH ROOF (34)

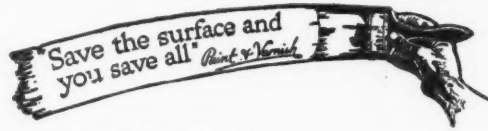


AN INCORRECT METHOD OF FORMING GUTTER FOR SAW TOOTH ROOF (35)



ANOTHER CORRECT METHOD OF FORMING GUTTER FOR SAW TOOTH ROOF (36)

SAVE THE SURFACE DEPARTMENT



Written, Illustrated and Edited by the Headquarters
Staff, SAVE THE SURFACE CAMPAIGN

Why Conserve Lumber?

By E. V. JOTTER

Forest Products Laboratory

WHY all this talk of conservation of timber? We still have 1,600 billion feet of virgin saw timber and 600 billion feet additional in culled and second-growth stands. This should be sufficient to provide lumber for the next 30 or 40 years.

Forty years, however, amounts to a very short interval in the life of a nation. Even now the decreasing supplies and lengthening hauls are adding to lumber costs and making more difficult the progress of national development. Wood is a necessity and by no imagination of inventions and substitutes is it conceivable that a satisfactory future national progress can be made without wood.

The situation must be met in three ways: by growing timber, by protecting it, and by eliminating our wood wastes through better utilization.

The control of forest fires, according to the Chief Forester, is our most important forestry problem. It is not alone that there is a huge annual loss in saw timber from fire, but it is evident also that without adequate protection for young trees there can be no future crop. In the national forests this problem has almost reached solution and with the resolute co-operation of the Federal Government, the states, and private owners, it can be solved eventually.

Insects annually cause losses to living trees and to crude, finished and utilized forest products that are estimated at \$13,000,000 despite the fact that government entomologists and others have made notable progress in devising methods of checking them.



"Smilin' Through," the Home of Arthur A. Penn, Block Island, R. I., Is the Rathbon-Mott House, About 150 Years Old. Made of hand hewn oak timbers with hand split shingles, this house is proof of the fact that frame houses, properly protected with paint and varnish, will endure.



The Longfellow Home, in Cambridge, Mass., Is an Excellent Example of the Permanence of a House Which Is Kept Well Painted. Even this inviting gateway is still sound and beautiful.

The losses involved in some lumbering operations will occur to anyone who has seen the high stumps and the large tops left in the woods, and the excessive slabs, edgings or trimmings. During the "timber mining" stage of the past, such wastes were often the unavoidable result of the economic development of the times, but under later day conditions great reductions in these wastes can and must be effected.

After the tree (or 40 per cent of it) has been converted into lumber, great losses occur in the processes of remanufacture. The whittling away of our resources at this stage is a problem the solution of which is by no means easy, but serious thought and effort are being given it. Studies now being made by the United States Forest Products Laboratory and interested industries have already pointed the way toward great reduction of the waste.

The last great enemy of wood is decay. It is also one of the first; it is active in the forest and is a menace at all stages after the tree has been transformed into lumber. The decay of wood is not so spectacular as a forest fire, but in the aggregate causes losses fully as great. Out in the woods, rotting may cause the loss of 25 per cent or even 50 per cent of the stand; lumber in any form of structure, if not protected by some finish or preserving treatment, will likewise succumb.

Decay once started in a forest tree can not be practically arrested, but in lumber and wooden products it is prevented by various stains, paints, varnishes and preservatives. This is peculiarly a consumer's problem. With standing property in the United States worth nearly ninety billion dollars and only one-fourth of it protected by a preservative finish of any kind, the challenge in this field for curtailing the wastes due to preventable depreciation is easily recognized.

Preservative treatments are not by any means universally applied. For example, although there are many railroad tie-treating plants, barely half of the 100 to 120 million ties used annually are treated. If all were treated the annual saving would amount to one and one half billion board feet, the American Railway Engineering Association estimates. Other big losses occur in lumber employed for such uses as bridge timbers, roofs, clapboards, fences, construction at mines, farm buildings, wharves and "outdoor" construction in general. At a very conservative estimate ten per cent of

this could be treated or painted and its life doubled; this alone would result in an annual saving of two billion feet.

In addition to prolonging the present supply by preventing and reducing tree and lumber wastes, a future crop may be provided. As yet this is being done in a very uncertain fashion, and all predictions point to a time of real scarcity between the exhaustion of our present supply and the maturing of a new crop. One feature of the national forestry policy, as expressed by Forest Service heads, is that areas now timbered and not suited, or needed, for agriculture shall be kept in continuous timber production, and other areas now waste, but once timbered, be reforested.

But no matter how quickly a national forestry policy is put into effect, a very long time must elapse before the requirements can be met by annual yield. How long will it be before our lumbermen, manufacturers, and home owners are united and pulling together for the elimination of every preventable wood waste? It is a matter of their individual pocketbooks.

Control of Household Vermin

MANUFACTURERS have learned that a sale is not really made until the product is in use by the ultimate consumer and the consumer is satisfied with it. The same merchandising truth upon which that most valuable of all assets—good will—depends, is true of houses, the products of the builder.

Perhaps there is no one annoyance that will more quickly take the joy out of life for a housewife than insect pests. A woman who must give constant battle to household vermin is going to view the question of home ownership through blue glasses, and this feeling will find expression in her conversation which will not do the "Own Your Home" idea, or builders any good.

Builders will do well to bear in mind, especially when remodeling old houses, the fact that crack-filler, paint and varnish are among the best means man has found for ridding a house of vermin.

The list of insects which may become household pests is a long one and includes cockroaches, bedbugs, the silverfish or "slicker," moths, ants, flies, mosquitoes, fleas, spiders and others.

A strenuous struggle, a vigorous campaign, is before any housewife who is called upon to dispute the occupancy of her home with any of these pests. The main factors of success are knowledge, eternal vigilance and thorough-going cleanliness. If food supply is cut off and if hiding places are sealed, two very effective steps are taken toward getting rid of the undesirables.

Fresh paint or varnish are death to most vermin. Direct contact with it and the sanitary, purifying odor it gives off are too much for these insects to "stomach;" they move out. One of the best ways to rid a house of these pests is to paint it. Every painter knows of instances where badly infested buildings have been without a sign of vermin after the painting was finished. In the case of hibernating insects paint is an excellent cure as it not only kills the adults that will father the flies and mosquitoes of next summer, but also the eggs, the larva and the pupa of moths, spiders and other pests.

Just as tests have fully demonstrated the sanitary value of washable flat wall paints in the elimination of dangerous bacteria, so has their efficacy in combating vermin been established. Several city health departments, notably that of New York, have largely or entirely abandoned fumigation in favor of renovation in the fight against germs and vermin. While it is not the writer's contention that paint products are the best agents or the only agents for the control of household vermin, it is an absolute fact that cracks and crevices that shelter insects are sealed or

made unattractive to them by means of the painter's brush; that such insects will not remain in the proximity of fresh paint, and that painted surfaces may be kept spotlessly clean—cleanliness (removal of food supply) is a first essential in any fight against vermin.



In the Kitchen More Than in Any Other Room Cleanliness Is Essential. Here paint is the means to cleanliness as well as the prevention of vermin.

Cockroaches are the commonest and most offensive of the house pests. Four kinds are often found: the American roach, a native insect; the European or Oriental roach, sometimes known as the black beetle; the Australian roach; and the little German roach or Groton bug. Rarely do two species occur in numbers in the same house. Usually dark colored, roaches have long, powerful legs and the mouth parts are well developed and have strong biting jaws, enabling them to eat all sorts of substances—dead animal matter, cereal products, woolens, leather and paste used on book bindings. Not only do they injure books, clothing, shoes and furniture, but they soil everything they contact, the repulsive "roachy" odor is well known. Food supplies so tainted are beyond redemption. Often shelves

and dishes become contaminated with this odor. Roaches are apt to be abundant in pantries, kitchens, laundries, bathrooms and about fireplaces and heating equipment; heat, moisture and crevices that offer hiding places attract them. Roaches are often spread from house to house by being introduced with supplies, furniture and goods; then certain species develop a migratory instinct. Their abundance is accounted for not so much by rapidity of multiplication as by the ability of the insect to preserve itself from destruction. They secrete themselves behind baseboards, furniture and door frames. Their flat, thin bodies enable them to squeeze into very small cracks.

Among roach poisons and repellents are sodium fluorid, powdered borax, pyrethrum powder, sulphur and phosphorus; among fumigants are hydrocyanic-acid gas, carbon disulphid and pyrethrum fumes. In the use of these great care must be exercised as some of the materials mentioned are poisonous and some are highly explosive.

In bakeries and on ship board it is sometimes practical to trap roaches, but in houses other methods of extermination are usually better. It will probably be found more convenient to use paint and varnish, being sure that all cracks and crevices in woodwork, floors and walls are well filled, using crack fillers where necessary, than to sprinkle dangerous powders and pastes where foods are stored and prepared, or sealing up rooms for hours using noxious, dangerous gases.

The presence of bedbugs is not necessarily an indication of neglect or carelessness; they may be brought into the house in luggage, on laundry or clothing, or, as is quite likely, through migration.

The bedbug is normally nocturnal, wary and intelligent in its efforts at concealment, but under stress of hunger it will attack voraciously in broad daylight. Its most characteristic feature is the distinct and disagreeable odor which it exhales.

In common with other insects which attack man and warm-blooded animals, it is entirely possible for the bedbug and its close allies to be transmitters of contagious human

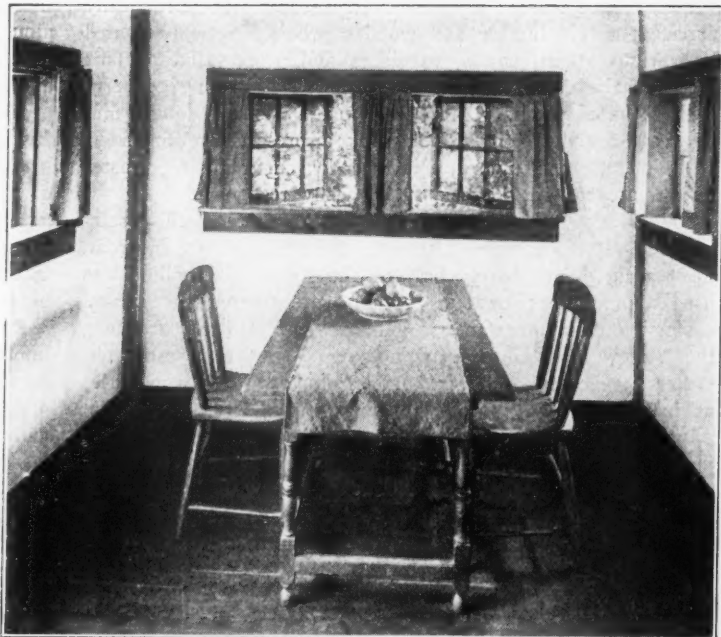
diseases, and already these insects have been shown to be possible carriers or transmitters of a considerable series of diseases.

The most efficient remedy is to fumigate with hydrocyanic acid; this gas will penetrate every crevice and has an immediate effectiveness. But if conditions are so bad as to require this treatment by all means employ an expert. The gas is a deadly poison and its use is expensive. Fumes of burn-

ing sulphur are efficient and not so dangerous, providing conditions are such that this method can be used; there is, however, a considerable risk of injury to fabrics, furnishings and wall paper from the strong bleach-quality of sulphur fumes. Before such fumigation all metallic surfaces, especially silverware, should be removed or coated with vaseline. Care must be taken against overflowing of the burning sulphur and against fire. Danger of bleaching will be lessened if the work is done during the winter when the house is very dry. The house should be thoroughly aired after the 24 hours of fumigation.

Frequent and liberal applications of benzine or kerosene and constant inspection may prove efficient remedial measures, if the infestation is light and if one can stand the clinging odors and has the time for the work. A temperature of 100 to 113 degrees F., accompanied with a high degree of humidity, maintained for 24 hours, or a temperature below freezing, maintained for three weeks, will destroy eggs and adults. Probably the simplest and surest path to freedom is by way of the paint pot. Varnish beds, fill all cracks and crevices in wood work and walls, and paint them; then watch and have some benzine handy. Paint and varnish will accomplish wonders.

Household Insect Pests Are Apt to Collect Beneath Loose Wallpaper and in Cracks in Woodwork, Especially When Heat and Moisture Are Present. This illustration shows conditions attractive to vermin. Filling cracks and painting or varnishing all surfaces is one of the best and safest methods of control.



In the Breakfast Room Light Tones and Colors, in Combination with Bright Drapes, Create Just the Right Atmosphere to Start the Day in a Cheerful Mood.



The Cellar Is a Part of the House Where Vermin Is Apt to Collect and Propagate. Paint, properly used, will prevent this and will make the cellar easier to clean, improve the lighting and prevent dust.

A Store Building of Spanish Design

By J. HAROLD HAWKINS



Because the Modern Buying Public Is Always Attracted by a Pleasing Exterior, the Money Spent in Making the Store Building Beautiful Is a Profitable Investment. The beauty of the Spanish style, with Granada tile roof and decorations, was largely responsible for the fact that these stores were rented before the building was completed.

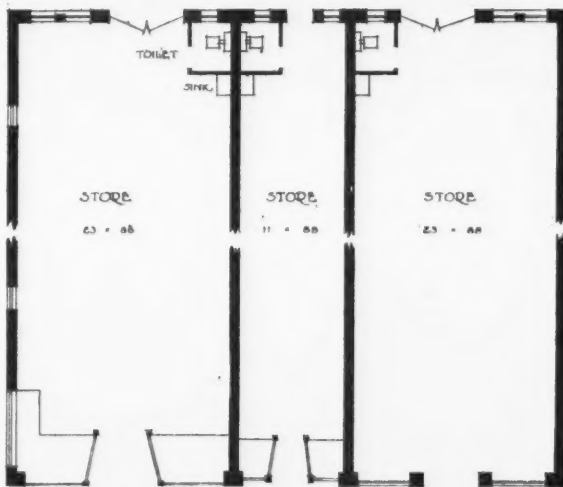
SO far as its ability to make its salt is concerned a commercial building of architectural beauty will outlive its neighbor of ordinary lines and proportions. There are several reasons for this, any one of which ought to convince the owner of a commercial building, be it a single store or an office skyscraper, that it pays actual dollars to create the beautiful rather than the ordinary or ugly.

The building that has been erected for commercial purposes should contain elements in its makeup that will insure for its owner a continuation of its profitableness as time goes on. At first, a building's newness and location usually warrant the investment being made without fear of its becoming a white elephant instead of a bag of gold to the original investor. But when a new building goes up alongside, or across the street or the busiest portion of the thoroughfare moves away, then there is a great liability of a decline in the ordinary building's value as a profitable investment.

The modern buying public will patronize that shop which does not grate on its esthetic nature. Consciously or unconsciously, the present-day shopper will discriminate between the beautiful and the ugly. Wise is the investor who realizes this tendency before he commits the mistake of erecting an unattractive building.

An excellent example of modern architectural treatment of a small store-building is shown herewith. The lines are good. People like to trade at "nice" places and here is one.

The Spanish idea predominates generally in this group



There Are Three Stores Under One Roof in This Building. The two outside ones are 23 feet wide and the center store is 11 feet wide. All are 88 feet deep. The entrance and window arrangement varies.

of three stores under one roof. The flat roof and Spanish tile emphasize this type of architecture, as well as fit into the necessary general proportions that such a building dictates. Tiles have been employed in a pleasing manner under the show windows. The tile background is brown with pastel shades of yellow and green tiles set in to form a conventional pattern. The stucco exterior of the building is a cork brown against the soft shade of which almost any color of trim may be employed without resulting in a clash of colors.

The building is 59 feet 10 inches wide by 90 feet long. In the rear there is a cement drive for unloading goods. The types of fronts vary. The one on the corner has a side

show window and an entrance vestibule. The center store has a narrow vestibule with show windows on both sides. Each of the three stores has a toilet and sink. The space thus utilized for lavatories is as small as practicable, the partition being 5 foot 3 inches by 4 foot 6 inches.

The comparatively small extra cost that it takes to secure attractive results in a commercial exterior that is architecturally sound and has some true decorative beauty is better invested as such, than the entire balance of the cost of the building would be without this added value of a well done exterior. The owner of the building shown, Mr. M. R. Essery, proved this valuable point to himself when he found that his stores rented before the building was completed.

The building was designed and built by Hurlburt and Tifal of San Diego, California.

No One Hurt!

Safety Features Prevent Accidents and Injury to Workers in Construction of Highest Building on the Pacific Coast

By CHARLES W. GEIGER

THE accompanying photos show some of the many safety devices that have been instrumental in preventing death and serious injury to the workmen engaged in constructing the twenty-six story building of the Pacific Telephone and Telegraph Building in San Francisco.

A novelty in building construction is the use of two passenger elevators which are used in carrying the employees between the various floors. The employees are positively prohibited from riding on any material elevator or hoist. The passenger elevators are installed in the regular elevator shaft being driven by a portable motor. Each elevator is in charge of an experienced elevator operator and is provided with all the safety features that are used in the ordinary passenger elevator operating in office buildings.

The installation of telephones throughout the building and connected with a switchboard placed in the field office greatly facilitates inter-communication and can be used for calling ambulance in case of accident, thus saving much valuable time.

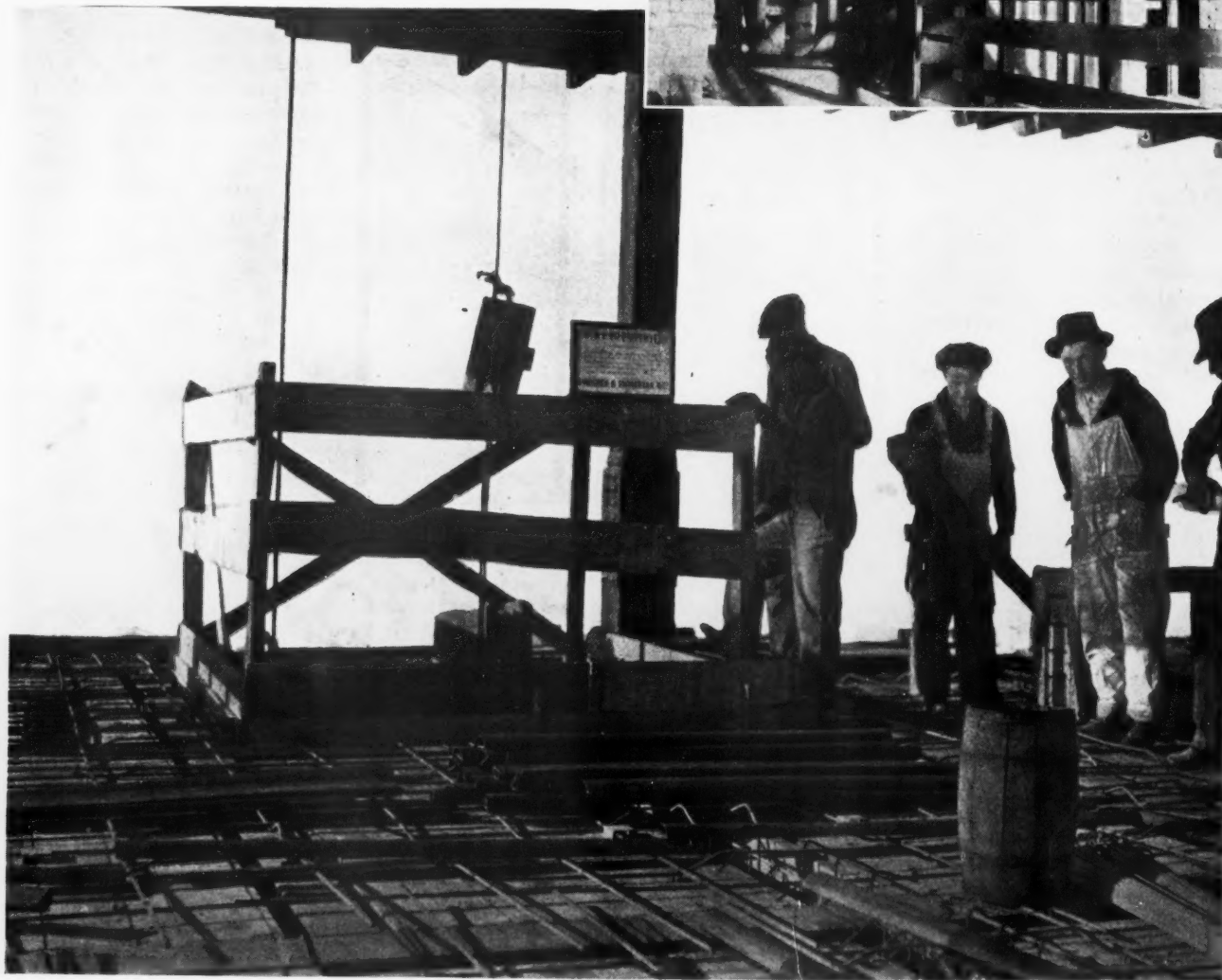
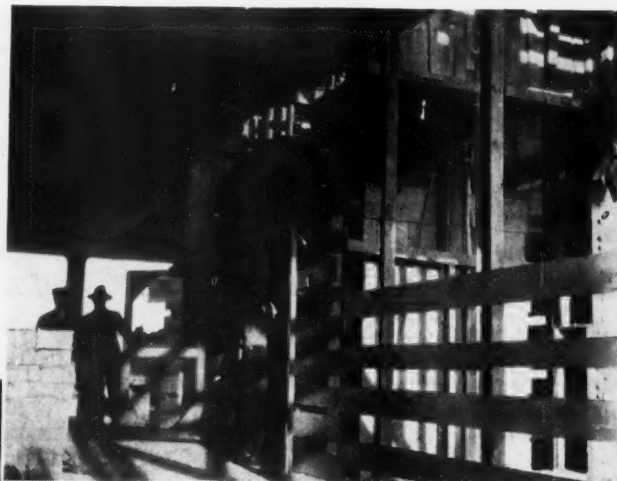
All floor openings are entirely surrounded by a three-rail railing of substantial construction.

Rope railings are stretched along the outer edge of the outriggers scaffold used for stripping forms which affords

protection to the men working on forms on the outside wall of the building.

A special wooden chute is built up through a light wall through which all debris and pieces of wood are removed from the upper floors.

The outer edge of the brick layers scaffold is protected by wire screen which is much stronger than the usual canvas previously used for this purpose. Men working on the brick-



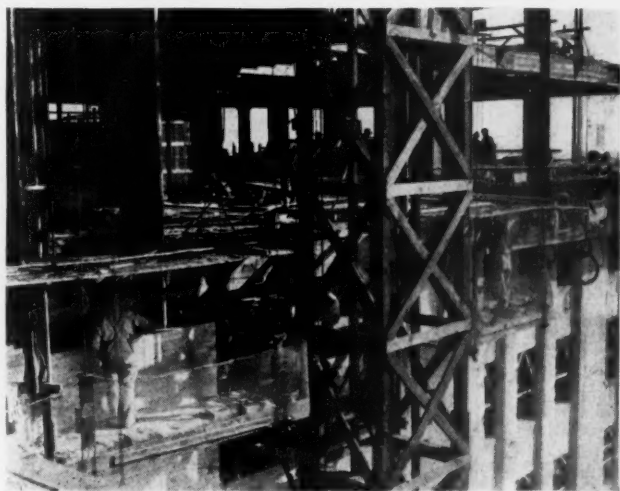
Below: All Openings Are Surrounded by Three Railing and Toe-Boards. Above: Employees are carried between the floors quickly and safely by these passenger elevators.



Men Working on the Outer Edge of the Outriggers' Scaffold, Stripping Cement Forms on the Outside Wall, Are Protected by the Rope Railing.



Inter-communicating Telephones Are Not Only a Safety Measure But Greatly Facilitate Communication Between Foremen and Others.



Overhead Protection Is Provided for Brick Layers. Note how wire screen and toe-boards are extended around the outer edge of the bricklayers' scaffold.



All Debris and Pieces of Wood Are Removed from the Floor by This Chute Passing Through a Light Well.

layers scaffold have been provided with an overhead protection consisting of heavy boards supported very substantially.

Mr. J. J. Rosedale, Safety Engineer employed by the contractors, Lindgren & Swinerton, Inc., designed and installed the many safety features in this new building and through a series of safety posters is educating the workmen themselves in safety practices.

There's Money in Housemoving

Moving Houses Is a Profitable Business Requiring Only a Small Amount of Capital and a Modest Investment in Tools and Equipment

THERE is one branch of the building industry that seems to have been slighted by many men, and that is housemoving. Having in mind all the possibilities of this business it is surprising the lack of competition to be found in it. Everyone seems to fight shy of it; people look upon it as an extremely hazardous form of work and few care to engage in it.



Fig. 2. Power for Moving the House Was Furnished by This Motor Truck Equipped with a Winch.



Fig. 1. The House on the Way to the New Location.

Notwithstanding the general opinion, housemoving, as many have discovered, is a profitable business, and the risks entailed are no greater than many other forms of work. One of the chief advantages of housemoving is the fact that very little equipment is required, and that whatever equipment it becomes necessary to purchase will last for an indefinite time. Like any other trade, housemoving requires certain qualifications before a man can engage in it, but the requirements are no more stringent than those for the man who intends to engage in the mason contracting business or in the sidewalk business.

Illustrated in this article are a

few photographs of a typical housemoving job. This job requires the moving of a stucco residence several blocks. While the building was not of exceptional size, it was big enough to make the job an interesting one, and to display several points which may prove of service to those interested in this kind of work.

Fig. 1 shows a front view of the house, taken while it was being moved to its new location. As will be seen from this illustration, the building was wide enough to practically occupy the entire width of the street, just enough clearance being provided for the moving-falsework. A sun parlor attached to the house added somewhat to the difficulty of moving it but this item was taken care of in a very efficient manner.

It is interesting to note the kind of motive power used to move the house. This was a motor truck, especially fitted up with a winch which operated from the motor which was used to drive the truck. Thus the truck could be used for two purposes, to carry mate-

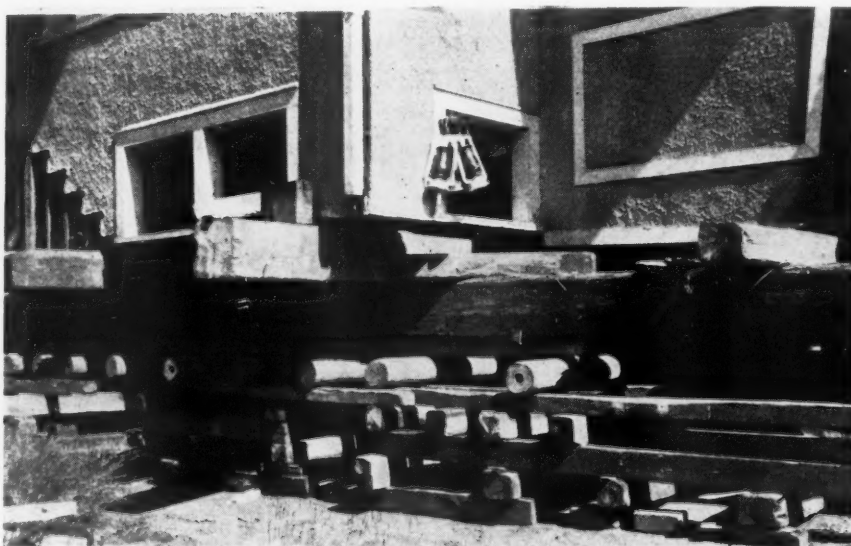


Fig. 3. View of the Cribbing Upon Which the House Was Supported. Notice that the rollers run on a track consisting of four timbers distributed throughout the length of the rollers.



Fig. 4. The Brick Porch Piers Were Carried on 10 by 10's Placed Across the Longitudinal Timbers.

rials to and from the various jobs, and to furnish power for moving the houses. Notice that this contractor uses a flat-bottom truck as this type of truck is best suited to carry the kinds of materials ordinarily used in housemoving. Fig. 2 shows the truck in position for moving the house.

Inasmuch as this house was terraced above the sidewalk in its original location it was necessary to move it on cribbing about 3 feet high. This cribbing was built up as shown in Fig. 3, of long timbers and short crosspieces, arranged as shown, with the rollers carried on a 6 by 12-inch track. Longitudinal timbers, running the full length of the house, carried the load which was transferred to them by the transverse timbers which were set across the building underneath the



Fig. 5. Popular Steel Wheel Truck for House Moving in Use at Genierco, New Mexico.

main sill. Thus the longitudinal timbers were used to take the place of the foundation.

In most cases it is customary to remove all projections such as porches and sun parlors before the house is moved. These projections are generally wrecked, and rebuilt anew at the site to which the house is moved or they may be cut off from the main building and moved as a separate unit. In this job, however, the sun parlor was carried on some additional timbers as shown in Fig. 4, thus saving money for the owner. Notice in Fig. 4 that the brick piers at the corners of the sun parlor are securely wedged in place so that there is no danger of their cracking or breaking.

This article illustrates a typical housemoving job, showing the equipment required and the method of doing the work. Some additional equipment in the way of heavy housemoving trucks for moving sections of small buildings instead of setting them up on cribbing are also valuable additions to the housemover's store. These trucks are generally made of steel, and where they can be used, are much more efficient than cribbing. An illustration of a typical set of housemover's trucks is shown in Fig. 5.



Real Estate Licensing Laws

THE tendency toward more strict regulation of business by law is again shown in the present movement to extend real estate licensing laws. Such laws are now in operation in some states. Similar laws are expected to be introduced this year in the legislatures of thirteen states which do not have any such statutes. In ten other states amendments providing for the more rigid enforcement of existing license measures are under discussion.

In Wisconsin the Real Estate Brokers' Board, which administers the license law, has been doing pioneer work in applying a competency test to applicants for licenses and has handled twenty-nine complaints with the result of \$36,000 being returned to complainants. The New Jersey Real Estate Commission, after settling 173 cases and returning \$40,000 to complainants, recommends that hereafter applicants for licenses be required to take an examination to determine their fitness. Provision for a competency test will be included in the licensing bill which Texas realtors are preparing to be presented to the legislature of that state. This bill also requires an affidavit of probity and a \$1,000 bond to insure faithful performance of trust.



Values Have Gone Up

ANOTHER story illustrating the almost incredible increases in property values which have been characteristic of the growth of American cities has been discovered by the National Association of Real Estate Boards.

Back in 1859 one A. C. Wright owned 278 lots in Denver, Colorado. Eighteen of these were in the heart of what is now the downtown section. All of this property and, in addition, a 160-acre ranch in what is now the Argo district of Denver, Wright offered to a Mexican in exchange for a horse, saddle and bridle. The Mexican laughed at him and refused the offer. Later Wright sold his ranch for a horse and \$25 cash. There is no record of what he got for his lots.

In the 65 years which have elapsed, less than the lifetime of many men, this property has increased to a value of unestimated millions.

Model Homes to Be Built at Own-Your-Home Shows

IN accordance with the recent decision of the various exhibit committees of the National "Own Your Home" Expositions to teach the public good construction practices and the proper uses of certain materials and equipment, houses in the process of construction will be featured at the expositions to be held this spring in Chicago, New York City, Philadelphia and Buffalo.

The four houses selected for these unique exhibits, as expert examples of small house designs, were selected only after long deliberation on the part of the exposition architectural and building materials committees and the examination of hundreds of exceptional architectural plans. These committees considered the adaptability of the designs for the demonstrations planned as well as their architectural charm and the probable material and labor costs of building them.

The front elevations will be completely reproduced on the floor of each exposition, showing part of the roof and several windows. These elevations will be set in old fashioned English rose gardens and give the appearance of finished houses, and the rest of the structures will be shown under the process of construction, presenting striking

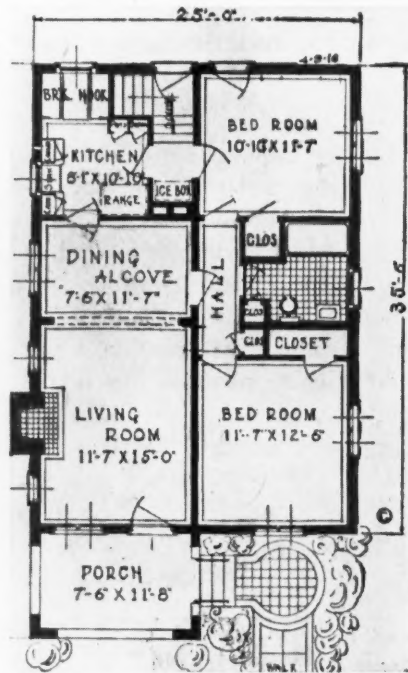
jection of the roof, the casement windows and the old English chimney pots give a distinctive appearance to this design.

Although the floor plan provides for only four rooms, there is a dining alcove that adds space to the living room. No doubt the small family living in this house would use the breakfast nook a great deal, and, therefore, have the use of an unusually large living room. The two bedrooms are so arranged as to be a private suite, shut off from the balance of the house. It is possible to enter the kitchen from either one of the bedrooms without going through the living room. An attic is available through a scuttle placed in the rear bedroom closet.

A five-room house has been designed for the New York exposition by Arthur C. Holden, member of the American Institute of Architects and chairman of the architectural committee. Like the Chicago house, its long low lines are particularly adapted to the plans of the landscape and garden committee to reproduce an old fashioned English rose garden. The exterior finish of the elevation for this house is to be portland cement stucco on concrete block and the problem of the small home builder has been care-



This Four-Room House, Selected by C. Herrick Hammond, First Vice-President of the Illinois Chapter of the American Institute of Architects, Was Shown in the Process of Construction at Chicago's Fifth Annual Own Your Home Exposition. The floor plan appears at the right.



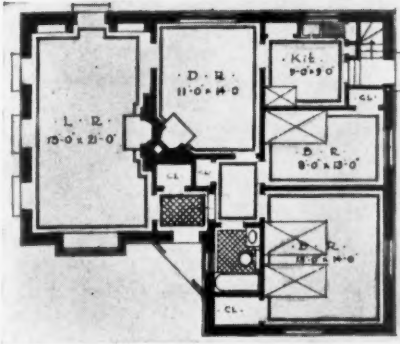
lessons in how foundations should be laid, walls built and plumbing installed. These exhibits will include side walls, showing the use of various materials, cross-section displays, and exhibits of products in their proper relation to other materials used in the modern home.

Such displays will provide visitors with a comprehensive picture of correct construction, educate them in the use of standard materials and products and finally convince them that the properly planned and well built house will have considerably less upkeep and depreciation than the house that is poorly planned and cheaply built.

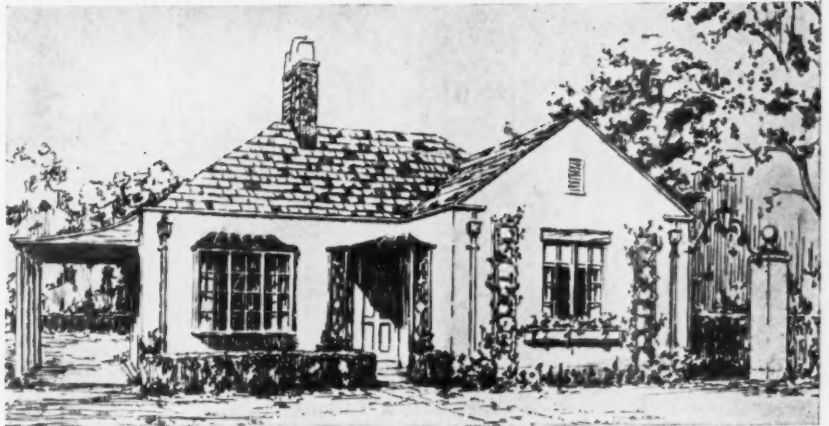
A four-room house designed by the Architects' Small House Service Bureau has been selected for the Chicago Exposition. The facade was built of pink magnesite stucco on concrete block with green-blue shutters and a tile roof. The side entrance to the porch, the broken por-

fully studied in achieving the floor plan for this design. A vestibule with two closets for coats is at the entrance. There are windows on three sides of the living room and a large fireplace in the middle of the interior hall. The three French casement windows open out upon the covered porch which is paved in brick. The dining room, adjoining the living room, also has a fireplace, a feature greatly desired by the modern home owner. The kitchen, with its own rear entrance, refrigerator and cellar stairway, is convenient and compact. The master's bedroom has a large closet, and adjoins the bathroom. There is also a second smaller bedroom.

In Philadelphia, where the building situation is different than in the other cities, a twin house has been selected by the architectural committee, of which James F. Talbutt, member of the American Institute of Architects, is



Floor Plan of New York House.



The Problem of the Small Home Builder Has Been Carefully Studied in Achieving the Floor Plan for the New York Seventh Annual Own Your Home Exposition Feature House. Design by Arthur C. Holden, American Institute of Architects. The New York exposition will be held in the 69th Regiment Armory, April 18th to 25th.

chairman. It will be pointed out to exposition visitors that this house, as an excellent example of the twin house and especially adapted for building in and near Philadelphia, is a higher grade house and more to be desired than the solid row type, prevalent in that city. The wood lattices on the porch and on the side openings into the small garden give this house more individuality than in the usual twin house design. See drawings, page 188.

Space in the floor plan of this house has been utilized to the utmost. On the first floor there is a vestibule and small hall leading into a good sized living room and dining room. The living room is provided with a fireplace and built-in bookcases and opens on a porch and garden. The

placing of the porch at the side of the house gives a desirable privacy. There is a large bedroom and two smaller ones and bathroom on the second floor and two additional bedrooms and bathroom on the third floor, so this house would accommodate a fairly large family.

The three members of the Buffalo exposition architectural committee have collaborated in achieving the design for the Buffalo house. Frederick C. Backus, American Institute of Architects, is chairman of this committee and

Floor Plan
of Buffalo House

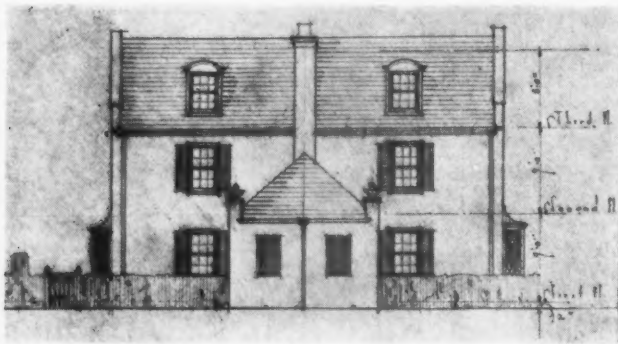
Frederick C. Backus, Chairman

OWN YOUR HOME"
EXPOSITION
BUFFALO N.Y. MAY 30-JUNE 6-25

"THE HOUSE THAT YOU SHOULD BUILD"

"THE COMMITTEE"
SMALL HOUSE DESIGN
BUFFALO CHAPTER
AMERICAN INSTITUTE OF ARCHITECTS

Unusual Appeal Is Found in This Five-Room House, Designed by the Three Members of the Architectural Committee of the Buffalo First Annual Own Your Home Exposition. The floor plan in the upper left-hand corner shows excellent utilization of space and a novel fireplace arrangement.

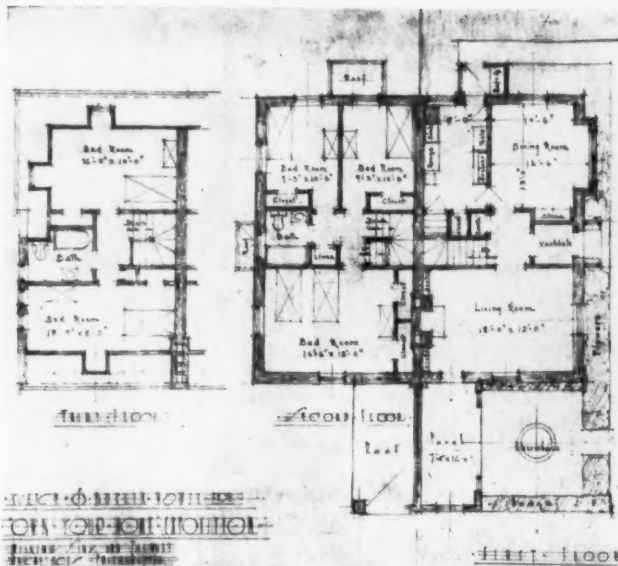


Twin Houses Representative of What Is Offered the Philadelphia Home-Seeking Public at the First Annual Own Your Home Exposition. Willing, Sims & Talbutt Architects.

William C. Lurkey, of Bacon & Lurkey, and Aaron Riley Merritt are the other members.

The partial construction of this house will be of portland cement stucco on concrete building block, with a tile roof. The architects have provided for an unusual number of windows in this design that add to its exterior charm. The sloping line of the roof and the way in which it fits snugly over the house gives this plan a cozy appearance.

The dates of the four licensed "Own Your Home" Expositions have been co-ordinated so national manufacturers may prepare one exhibit for travel from city to city. The Chicago Fifth Annual Own Your Home Exposition was held in the Coliseum, March 21st to 28th; the New York Seventh Annual Exposition will be held in the 69th Regiment Armory from April 18th to 25th; the Philadelphia First Annual Exposition will be held in the Com-



Floor Plan of the Philadelphia First Annual Own Your Home Exposition Feature House, to Be Shown in the Process of Construction.

mercial Museum from May 9th to 16th, and the Buffalo First Annual Exposition will be held in the Broadway Auditorium, May 30th to June 6th. All of the expositions are under the auspices of the local real estate boards in addition to being licensed by the National Association of Real Estate Boards, though no more space is allotted to real estate than to any other division.

Branching Out

Hummel and Hillebrand, Successful Contractors of Toledo, O., Make a Still Bigger Success as Manufacturers of Concrete Tile

TO read a record of success today is almost invariably to read a story of preceding failure. Apparently no chronicle of successful effort is complete without this "Rags to Riches" touch, reminiscent of the Horatio Alger series.

Delightful as this contrast may be, it has its dangers. Men of moderate success do read such accounts, but gain a hazy impression that there is no lesson for them as they lack the poverty to complete the parallel.

The falsity of this idea is well shown by the following account of successful men who possessed the sense, intuition, or what you will, to realize that success is only relative,

that conditions change and that the price of real success is foresight and the ability to revise policy and even activity in advance of the herd.

For fifteen years the firm of Hummel & Hillebrand, specializing in concrete work and roofing, was known as one of the most successful sub-contracting concerns in Toledo. One would hardly expect such a firm to enter the manufacturing field, but they had, during the past few years, seen the increasing hazard of dealing in labor as a principal commodity. Added to this was the old gamble with the elements, the owner and the ever-increasing horde of inexperienced competitors. For all contractors this presents a problem.

The manufacture in quantity of a standardized building unit, Duntile, was in this case the solution. Within one year it has become necessary for them to double their capacity and they say, "This expansion will probably mean our withdrawal from the contracting field."

Naturally such a step was not taken without careful investigation and consideration of all angles. Probably no ordinary manufacturing activity would have engaged their attention, but their experience as contractors made them unusually well able to appreciate the unique advantages of the unit finally selected. In addition they found that their most valued assets, experience and reputation, could be used in merchandising the new product.

In the manufacture and sale of this unit, Hummel & Hillebrand have not only secured considerable news publicity, but have demonstrated that tremendous sales can be built up by the exercise of ingenuity reinforcing expert knowledge of their product.

Instead of trying for only minor work they set about to



William A. Hummel, Left, and William D. Hillebrand, Right, Who Have Made the Step from Successful Contractors to Still More Successful Manufacturers of Concrete Tile.



Discharge End of the Hummel & Hillebrand Yard, at Toledo, Ohio, Showing the Curing Chambers in the Foreground.



One of the First Jobs Secured by the Tile Manufacturing Business Was for the Residence of George B. Rheinfrank, Architect, in the Exclusive Eagle Point Colony.

see their product placed in a variety of responsible structures from cellar to roof. "Why not?" says Mr. Hillebrand. "It is as easy and, in fact, in some ways easier, to sell a big job than a small one. The large buyers are keen, intelligent, responsible and highly appreciative of economies which, perhaps small in percentage, loom large in actual amount."

One of the first large jobs they secured was the tile for all the walls and masonry partitions in the residence of Architect George B. Rheinfrank, located in the exclusive Eagle Point Colony of Toledo.

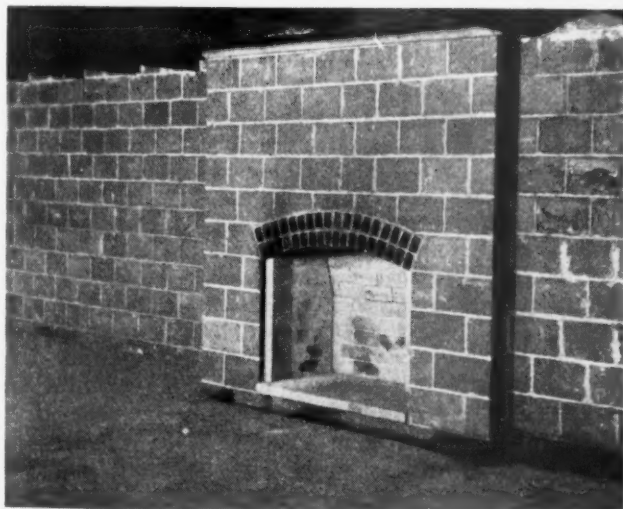
The adaptability of this concrete tile is well illustrated by the fact that the walls of the billiard room are to be left unplastered—with beautiful effect.

Sales are not built by sitting like a spider in a web waiting for something to turn up, so that when Hummel & Hillebrand learned that the Kelsey & Freeman Lumber Company would build a new warehouse they were on the job, unpromising as the prospect seemed. Naturally the owners figured on building of wood, using their own lumber at *wholesale cost to them*. Even so, the concrete tile figures compared very favorably, but Hummel & Hillebrand showed their real resourcefulness in bringing out the fact that with their construction the underwriters would allow a reduction in insurance rates of 33c per hundred on both building and contents, saving \$850.00 annually.

Further, additional maintenance costs on a frame building would average \$205.00 annually. With these figures before them there could be no question as to choice of

materials. A triumph—yes, but their job was not yet done. As experienced contractors, Hummel & Hillebrand fully recognized the sales value of the labor-saving possibilities in the laying of their product and made capital of it. On this job, for instance, they ascertained that the average amount of wall laid by each mason throughout the job was equivalent to over 4,300 brick per day.

Hummel & Hillebrand have an efficient factory. One bay of their warehouse was partitioned off, steam tunnels were erected outside this and the equipment installed, the total building expense being less than \$400.00. At that time provision was made for a future installation of equipment to double their capacity, and it has already been necessary to double original capacity and a program of future development has been laid out which includes redoubling during 1926.



All the Tile for Walls and Masonry Partitions in the Rheinfrank Residence Was Furnished by Hummel & Hillebrand.



The Completed Rheinfrank Residence Is Shown Above While Just Below It Is Seen in the Course of Construction Showing the Tile Walls Construction.

The First Complete Description of the Carver-Economy Wall

Full Preliminary Details and Data on Cost Properties, and Instructions for Its Erection

By WILLIAM CARVER, Architect

This Article Was Prepared in Advance for Presentation at the Seventh Annual Convention of the Common Brick Manufacturers' Association of America, February 9-13, 1925, at Chicago, Ill.

THE common brick industry announces the advent of an entirely new type of brick wall especially adapted for small homes—the Carver-economy wall, the lowest cost masonry construction yet devised.

Essential Facts

1. The Carver-economy wall is a type of brick construction designed primarily for one or two story and attic houses and for garages, filling stations and many other minor buildings.

2. This construction is placed on top of the foundation wall built in the ordinary way.

3. It requires $7\frac{1}{4}$ by $7\frac{1}{2}$ brick per square foot, as against 9 for the Ideal all-rolok wall; $10\frac{1}{2}$ for the Ideal rolok-bak wall; or $12\frac{3}{4}$ for the solid brick wall 8 inches thick.

4. The Mohawk design, twenty-six feet by thirty feet in outside dimensions and shown in our plan book, "Your Next Home," requires for its exterior walls above the bottom of the first floor joists the following number of brick:

Type of Wall	Number of brick in exterior walls above foundation	Cost of these brick at \$16 per thousand
Solid brick	25,130	\$402.08
Ideal rolok-bak	20,696	331.14
Ideal all-rolok	17,739	283.82
Carver-economy	14,783	236.52

(We call attention to the comparatively small amount required for the brick [for the exterior wall above first floor line] in a house of this size.)

5. It is a 4-inch wall reinforced by pilasters and blanketed by back mortaring.

6. This mortar blanket is placed as the wall goes up by the same mechanic who builds it, thus avoiding extra overhead expense.

7. Every window and door opening has an outside 4-inch reveal, and every frame is bricked in.

8. All floor joists are set on masonry supports.

9. Inside plastering is on furring strips, supported by the wall.

10. This wall must not be confused with brick veneer. It is a true wall, every part functioning to support its proper share of the load.

11. This wall has a large factor of safety, is warm and is fire safe.

12. Its cost is less than the cost of frame construction, and is far below the cost of any other type of honest masonry.



William Carver, Architect, Who Designed the Carver-Economy Wall.

Properties of the Wall and Its Cost

The Carver-economy wall is a wall four inches thick, strengthened at intervals by pilasters. The pilasters act also as supports for furring, enable window and door frames to be properly bricked in, leaving a 4-inch outside reveal, and partially support the floor construction above. For two story houses the wall is so constructed that the second floor joists are supported upon masonry. The plastering lath is nailed to 2-inch by 2-inch strips placed vertically. Various other details of the construction are more fully described below.

The Carver-economy wall is not brick veneer. One important requirement of a properly designed wall is that every portion of its structure shall assist in bearing the loads and resisting the stresses which come upon it. This is not accomplished with brick veneer, in which a thin shell of brickwork is supported by the frail structure of the wooden framing, the brickwork supporting no part of the load, but on the contrary, actually weakening the frame wall. In the Carver-

economy wall all the load is carried by brickwork, every portion of which is made to fulfill its proper function of resisting stresses.

Heat Resistiveness

The 4-inch brick wall, blanketed with mortar on its inside face, has a very high value in resisting the passage of heat and cold. "Cool in summer and warm in winter" is the established characteristic of brickwork used in thicker walls, and while the 4-inch wall has naturally a lower degree of resistiveness than the 8-inch solid wall, it is a warmer wall in winter and a cooler wall in summer than other types of wall that are also used in residence construction, as the following table shows. The "unit of heat loss" means the measure of the heat passing through the walls, figured on an hourly basis. The lower the figure, the better the insulation afforded by the wall.

It thus appears that the new wall, even without the back mortaring here recommended, affords better protection from heat and cold than an 8-inch concrete wall or a 4-inch hollow tile wall, and the same protection as afforded by a 4-inch thickness of hollow tile plastered on one side or by a 6-inch thickness of hollow tile unplastered.

All the figures above, except those for the 4-inch brick walls, are quoted from the 1924 yearbook of the American Society of Heating and Ventilating Engineers. The values for the 4-inch brick wall have been very carefully computed by the formula given on page 1089, vol. 2, of Hool



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and Johnson's Handbook of Building Construction. The results given by this formula check (within a few points) the figures quoted from the year book. These figures can be therefore confidently relied upon as being conservative and safe.

Heat Conduction Properties of Various Walls

Thickness of wall	Unit of Heat Loss
4-inch.. Plain brick wall (not back mortared)57
4-inch.. Hollow tile64
4-inch.. Hollow tile plastered one side57
6-inch.. Hollow tile57
4-inch.. Concrete85
8-inch.. Concrete60
Stucco on metal lath and frame construction, consisting of stucco on metal lath, studs and plaster on metal lath64

Load Bearing Capacity and Fire Resistiveness

This wall is a 4-inch brick wall strengthened at intervals by pilasters. This employment of pilasters obviously provides a type of construction that is much stronger than a single thickness of 4-inch brickwork which is not thus stiffened and reinforced. There has not been sufficient time to determine the exact additional strength which these pilasters confer upon the 4-inch wall. We have plenty of evidence, however, that 4-inch walls in themselves are strong enough to support the loads which would come upon them in an ordinary 2-story and attic house.

The use of 4-inch brick walls for bearing partitions is common in Great Britain and in some continental countries. The following table shows some test results on 4-inch walls made by the British Government about two years ago.

Most remarkable results have been secured recently by the U. S. Bureau of Standards in tests of 4-inch brick walls. These test results are the more noteworthy when it is considered that they were made upon walls about ten and a half feet high, a great deal higher than the distance floor to floor in any residence, that the walls tested were plain 4-inch walls without the pilasters which are an essential feature of the Carver-economy wall, and that the walls were not back-mortared.

This Association asked the Bureau of Standards to authorize a preliminary statement on these tests for this article. This the officials of the Bureau kindly consented to do, and the official statement follows. This must be read with the fact in mind that every pronouncement of the Bureau is extremely conservative.



Fig. 1 General View of the Inside of the Carver-Economy Wall.

"The U. S. Bureau of Standards has recently completed a series of fire tests of brick walls and auxiliary load tests of brick masonry. In the fire tests the plain 4-inch walls gave heat resistance equal to that required for the one-hour classification*. A later series of fire tests under load with walls 10½ feet high indicated ability to sustain central working loads under fire exposure for periods equal to or exceeding that required for the one-hour classification.

"The load tests of auxiliary masonry specimens indicated greater unit strengths by about one-third for the 4-inch walls than for 8-inch and 12-inch walls, the total load sustained per lineal foot of wall being about two-thirds of that sustained by the 8-inch walls**. It is expected that the introduction of pilasters will stiffen the wall and help to make it a reliable member as it concerns stability both under load and fire conditions."

Strength of Thin Brick Walls

Tests made by British Government on strength of walls 4½ inches thick. (4½ inches is the width of English brick)

Thickness of wall	Brick	Mortar	Crushing strength of 9 by 9-inch cubes—pounds per square inch	Age of cubes when tested—days	Crushing strength of wall 14 inches wide, 8 feet 6 inches high—pounds per square inch	Age of wall compression test—days	†Horizontal pull to break wall 3 feet 6 inches wide, 8 feet 6 inches high—pounds	Vertical load applied—in tons per foot run—while wall was tested under horizontal pull	Age of wall tested under horizontal pull—days
4½ inches	* Stock	1:3 Cement	770	26	638	24	895	2 tons	34
4½ inches	* Stock	1:6 Cement	720	26	562	23	791	1 ton	41
4½ inches	† Fletton	1:3 Cement	1,530	26	1,040	24	781	1 ton	39
4½ inches	† Fletton	1:6 Cement	1,250	26	930	23	705	1 ton	36
4½ inches	† Fletton	1:3 Lime	1,050	22	330	24	375	1 ton	27

* Hard burned stock brick, compressive strength, 1,460 pounds per square inch; soft burned, 760 pounds per square inch—both types of brick used in each wall.

† Compressive strength, 3,300 pounds per square inch.

‡ The horizontal load was applied at the center of the wall by means of a chain attached to a horizontal timber for spreading the load at the back of the wall.

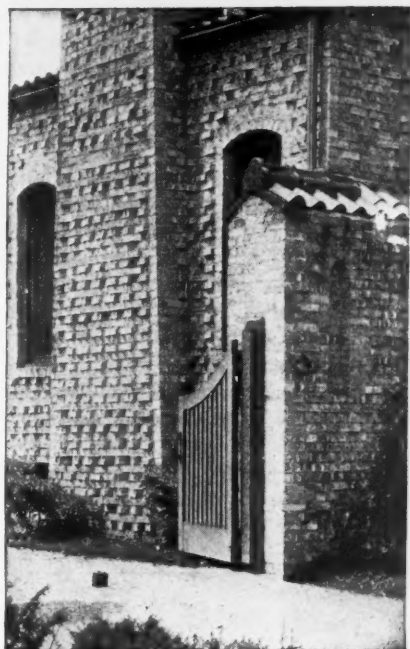
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You would never guess that the wall to the left is Common Brick. The irregular surface secured by the skillfully worked out pattern gives a unique antiqueness quite in keeping with the design of the home.

Mortar is used in the wall illustrated at the right in a quite out of the ordinary way. This home is in one of Chicago's most exclusive residential districts. In this instance Common Brick was used for its beauty alone.



The illustration at the left shows a corner of an attractive bungalow in which the brick project at various angles. The effect is far from ordinary, yet low-priced Common Brick is used for this wall.

The porch at the right illustrates a more conservative variation. These illustrate only four of the many new, novel and antique effects that have been produced by leading architects in Common Brick work.



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Building and Loan Association Growth

IN a review of the building and loan association growth of the past ten years appearing in the February issue of Commerce Monthly, published by the National Bank of Commerce in New York, the bank says:

"The building and loan association movement in this country has expanded greatly during the past decade. It is a striking fact that this growth has taken place during years when an unusual housing situation has existed. In 1912 there were roughly 6,300 associations in the United States, while by 1924 this number had increased to nearly 11,000. Membership in associations during this time increased from 2,500,000 to more than 7,200,000; total assets of associations from \$1,100,000,000 to \$3,900,000,000.

"The largest part of this increase in assets has occurred in the past five years or since the war. During these years the scarcity of living quarters and exorbitant rents has influenced an unusual number of persons to look around for some agency that would be of assistance to them in the matter of getting better and cheaper homes. A large portion of the building activity of the past two or three years has been of dwelling houses, and the increased assets of the building and loan associations have, of course, largely gone into building loans. On the other side of the matter is the relatively higher level of purchasing power of wages among certain groups of the community. Building and loan associations are attractive chiefly to those who save on a small scale from periodic wages.

"While it may be interesting to cast about for immediate reasons for the recent growth, more remotely the expansion is probably but a mature flowering of a long development and is consonant with the satisfactory discharge of an economic function and a long process of education.

"The growth in number and assets of building and loan associations has accompanied a broadening in their methods and fields of operation. Along with greater scope in tenure and method of share issue have other departures from the original type. The fixed dues system may not be adhered to. As the resources of a member actuate he may change the size of his payments without special arrangement. The method of disposing of funds to the highest bidder is passing; there is an established interest rate on real estate loans, and the auction and premium method is not used. Membership or initiation fees are not an essential part of the new type of association and fines for delinquency in paying dues are no longer as popular as they sometimes were with the earlier associations.

Earthquake Tests Construction

ALL reports show that the earthquake of February 28th was the most intense which has visited the eastern part of the United States since 1755. This quake gave the inhabitants of this section their first quake experiences. The tremors were felt distinctly along the eastern seaboard from Canada to the Carolinas and extended west to the Mississippi Valley. Near the center of the disturbance, New York, Philadelphia, Washington, Pittsburgh, Cleveland, Boston and Detroit, the quake was of such severity as to cause alarm. At Chicago and other more distant cities the shock was less intense.

The lessons brought home to architects and builders by this shock confirm those learned from such disasters as that of San Francisco in 1906, Porto Rico a few years later and in Japan in September, 1923.

Metal Lath News reports that to date no damage to plaster on metal lath has been reported as a result of the recent shock. This, in spite of the fact that in each of the cities most affected, there are millions of yards of plaster in which metal lath has been used as a base to reinforce and preserve.

After the San Francisco quake, when engineers and construction experts examined the structures which remained and the ruins of others, it was found that metal lath ceilings and partitions were intact and had prevented the passage of fire.

With the experiences of previous quakes as a background, this latest shock suggests a new field of service for architects to their clients in the eastern part of the country.



Rybolts Expand Plant

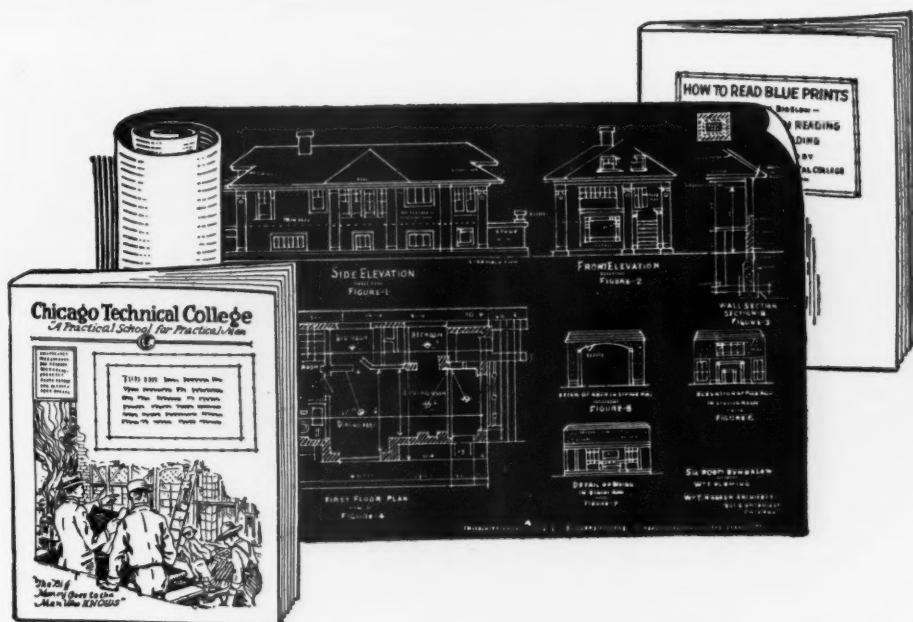
ON January 19 and 20, the annual convention of the Rybolt Heater Company, Ashland, O., was held at the company's headquarters. This convention is attended each year by Rybolt dealers whose sales for the preceding 12 months entitle them to this distinction. The convention this year was attended by a large number of enthusiastic dealers and was characterized by optimism in regard to business prospects of the coming year.

The accompanying photograph, of a group of the dealers attending the convention, was taken in front of the new offices of the company. Because of the large demand for Rybolt furnaces last year, and the definite indications of constantly increasing business for 1925, it was found necessary to enlarge the plant considerably, in order to greatly increase production and at the same time maintain standard quality.

A large building, adjoining the Rybolt plant, was secured from the company which occupied it and was in the process of remodeling at the time the photograph was taken.



A Group of the Dealers Who Attended the Annual Convention of the Rybolt Heater Company Were Photographed in Front of the New Addition to the Company's Plant.



SENT FREE

Mail the Coupon for These Two Books and Blue Print Plans

If you are in any building trade, we want to send you these 2 books and blue prints at our expense. One of these books contains a lesson in Plan Reading prepared by the Chicago Tech. experts; the other explains the Chicago Tech. method of training men by mail in the building trades for the jobs that pay the most money or for businesses of their own. All you have to do to get them is to mail the coupon. Don't send a penny.

Get the Knowledge That Will Make You Worth More Money

You may be as good a man as there is in the use of tools but as long as you remain a workman you won't earn more than the wage scale. It isn't manual skill that puts a man in big pay class—it's the ability to use his head that brings the fat pay check or enables him to "go in for himself." That has been proved over and over again by workmen who took the Chicago Tech. training in the higher branches of building and are now foremen, superintendents and contractors.

J. B. Woodside of Oklahoma was a carpenter working for \$6 a day when he took a course in training by mail at Chicago Technical College and was advanced to a foremanship in 2 months, became a superintendent 5 months later and then went into contracting.

Carl Testrodt of Iowa is another man who got into a successful contracting business through his training, as did J. G. Hart of West Virginia, and C. W. Busch of Kansas.

Not only workmen have got ahead through this instruction but also contractors who were taking on small jobs because their experience was limited. Chicago Tech. has taught them how to handle the big jobs that pay the most money.

Train by Mail

Never before have there been such opportunities as there are right now for men with expert knowledge of building. You can get ready for these big opportunities if you will use some of your spare time to study at home under the direction of the Chicago Tech. experts. No time taken from your present work. All this will be explained when we send you the free books and blue prints.

Become a Building Expert

Plan Reading. Every man who has got very far ahead in any building trade can read blue prints. No man

can expect to be a first rate foreman or superintendent until he knows what every line on a plan means and how to lay out and direct work from the architect's plans. By the Chicago Tech. Method you quickly learn to read any plan as easily as you read these words.

Estimating. Of course a man who wants to be a contractor or to hold a big job in a contracting organization must know how to figure costs of labor, material, and everything else that goes into any kind of building. The Chicago Tech. course covers every detail of this important branch—shows you just how it is done from actual blue print plans.

Superintending. How to hire and direct men, how to keep track of every detail of construction as it goes on, how to get the work done in the least time at the lowest cost is also fully covered in the Chicago Tech. Builders' Course.

Also special courses in Architectural Drafting for builders, taught by practical men. These explained in Special Catalog "D" sent on request.

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Please send me your Free Books and Blue Prints for men in the Building Trades. Send postpaid to my address below.

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Lateral Strength of Cinder Block Walls

THE Harrisburg Building Block Company, manufacturers of cinder concrete block, had tests made of a rather unusual nature.

Two wall sections on panels slightly under 6 feet long and 32 inches high, one of clay brick and the other of cinder block were laid horizontally and were loaded to failure. This test, made November 7, 1924, was reported under date of January 19, 1925, by E. L. Conwell & Co., Engineers, 2024 Arch Street, Philadelphia, Pa.

The walls were erected by a practical bricklayer, October 29, 1924, and were laid up in ordinary mortar. These walls were inspected by their representative in both vertical and horizontal positions before the test and found to be of good standard workmanship.

Specimens were supported flatwise on 4-foot centers and loaded at the center point with cinder block until failure took place. The cinder block wall specimen failed under a load of 1,227 pounds, or more than three times the load which broke the wall of the smaller units.

The illustration shows a larger cinder block wall sustaining a load of over 1,000 pounds. This was the subject of a former test. On this occasion the brick panel of same size broke in act of laying down, probably on account of its greater weight.



New Smith Representative

THE T. L. Smith Company, of Milwaukee, has just announced that its agency in Philadelphia has been taken over by the Beckwith Machinery Company, Brown and Frost streets. This company also has offices in Pittsburgh and Cleveland and will represent the Smith company in those cities as well.

The following representatives have also been appointed: Hubbard-Floyd Co., Inc., Lexington Ave., New York City, Herbert C. Legg, Phoenix, Ariz., Dixie Culvert Mfg. Co., Little Rock, Ark., Standard Building Supply Co., Shreveport, La. A full warehouse stock will be maintained by these representatives.



Saw-Making Made Less Hazardous

SAW-MAKING is a somewhat hazardous occupation when left to its own devices, but Henry Disston & Sons, Inc., have proved that it can be made much safer than many processes which would appear to be naturally less perilous.

An "Annual Safety Meeting" to celebrate the results of the 1924 Safety Campaign, held at Disston's Philadelphia plant, was attended by employees of the company. It included officials who have been working for years to secure the results celebrated. Vice-Presidents William Disston and Satterthwaite addressed the meeting, and hundreds of Disston workers, beginning with President Frank Disston down, found reasons for jubilation.

Some interesting figures were presented by A. N. Blum, chief engineer and chairman of the general safety committee, who organized the safety committee nine years ago and who has been in charge of the campaign since that time.

He showed that in 1916, with a smaller working force, a total of 5,471 working days were lost as the result of about 300 men being injured due to accidents. This was an average loss of 18 days per accident.

In the year just concluded, after nine years of safety campaigning on the part of Disston officials and workers, only 71 men suffered an accident causing loss of one or



Eight by 8-Foot Straub Block Wall Laid Down; Supported Seven Men and Several Cinder Blocks Before Rupture. Note mortar joints—battered on edges only.

more days' time, and but 1,174 working days were lost through accidents, with the average days lost per accident reduced to less than 17.

These figures are particularly impressive when expressed in percentages. Thus they show that since 1916 a reduction of about 80 per cent has been made in the number of accidents at the Disston plant. The number of lost days has been lowered about 78 per cent.

Safety first methods and prompt treatment of all injuries, however slight, contribute their share of these greatly improved results. Safety committees are appointed for each department, and by close co-operation and frequent conferences with the leaders of the business the whole matter of personal safety is kept continually alive.

In addition to the regular safety work, a very attractive insurance schedule has been worked out for employees of the Disston business. The policy offered is a combination accident, sick-benefit, and life insurance, written through one of the standard insurance companies which has specialized in industrial insurance. Participation of the part of employees is voluntary, but the payment of a part of the premiums by the company makes complete protection for the individual available at extremely low and favorable rates.

The Disston executives look upon their campaign for safety as a necessary and profitable activity to the men and to the company.



Milcor Opens Chicago Branch

A CHICAGO branch warehouse has been established by the Milwaukee Corrugating Company at 4650 West Harrison Street, following the purchase by the Milwaukee concern of the entire sheet metal equipment of the Cicero-Chicago Corrugating Company.

Milcor "same-day" service has now been extended to the Chicago trade by the establishment of this branch warehouse. The complete Milcor line of sheet metal products will be carried in stock.

W. F. Waller is in charge of sales of the Milcor general line. The metal lath and fireproof construction department is headed by W. F. Watson, who will have charge of the sales of Milcor fireproof products.

The Milwaukee Corrugating Company now has warehouses and factory branches in Chicago, La Crosse, Wis., and Kansas City. A large addition is being built to the Milwaukee factory at the present time.

SANI ONYX HAS A PLACE IN EVERY MODERN BUILDING



Store front finished in black and white Sani Onyx. Such application of Sani Onyx is specially fitting. In addition to the strong suggestion of cleanliness and sanitation, the beauty is permanent.

for exterior use, too!

SANI ONYX is so universally used because of its beauty for interior finishings in bath rooms, kitchens and hallways that its application as permanently beautiful exterior trim for entrances and store fronts, is sometimes overlooked. Here as in interior work, the many exclusive Sani Onyx advantages such as resistance to wear, acid, alkali, moisture, oil and repeated cleaning are highly desirable.

Four colors, blue, gray, white and black in plain or tile pattern sheets with flame glaze or matte surface give the architect and builder a wide

choice for splendid color and pattern combinations. The Marietta Engineering Department will co-operate gladly on any project. —Use it.

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INSTRUCTIONS IN ROOF FRAMING

The A B C of Roof Framing

By JOHN T. NEUFELD

DURING the last few years the writer has received numerous requests for information regarding roof framing and the steel square. From these requests it is evident that there are three important points on which information is lacking. These three points will be enumerated and discussed in this lesson.

Point "A"—The Essential Knowledge

Many requests read about as follows: "Tell me all about the steel square"—or "I would like to know more about the steel square."

The general impression seems to be that there is some mysterious thing about the steel square that if a person knows it he will be able to do any kind of roof framing. Perhaps it works like a slot machine, put in the coin and out comes the information.

It is true that the steel square is a wonderful tool but it is also true that the usefulness of the steel square is based on very simple mathematical rules, and therefore what the carpenter needs first of all is a knowledge of the principles of roof framing. Perhaps it would be even more to the point to say that the carpenter needs to understand the mathematical principles by which the framing of roofs is figured.

The steel square will lose much of its mystery if we understand *arithmetic*. The purpose of these articles has been and will be to teach the *why* of the methods and rules of roof framing and not simply to give a set of so-called rules and short cuts. The man that understands the principles will develop his own rules and methods.

Point "B"—The Best Method

Other letters and requests have brought the idea that there should be one best method of obtaining the lengths and cuts of rafters. Many, too, believe that their particular method is the only one that is of any use. I would answer these that

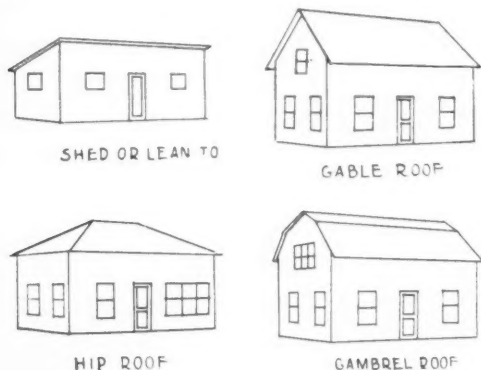


Fig. 1. Four Types of Roof Commonly Used in Residence Construction Work Are the Shed or Lean-to, Gable, Hip and Gambrel.

the important thing is to learn the principles of roof framing and then develop the methods that are best suited for their particular work. In these articles different ways or methods of arriving at solutions will be given and explained. Get the good points in favor of each and you will benefit by them. The best methods are those that best suit your needs.

Point "C"—The Elementary Knowledge

In many cases where information on some technical point of roof framing is wanted it is found that the one does not understand clearly the first principles of roof framing; that is, does not clearly understand the *pitch of a roof*.

Take, for example, the question:

"What is the rise per foot run of a three-fourths pitch roof?" Many will argue that it is 9 inches per foot run. (Try to answer this yourself.)

The first, then, to learn is about the pitch of a roof. After this is thoroughly understood, a great deal of the difficulty in roof framing is removed. To explain this point we will give a list of questions and answers. These will be rather elementary to some readers, but to others they should give the knowledge that is so essential to an understanding of our subject.

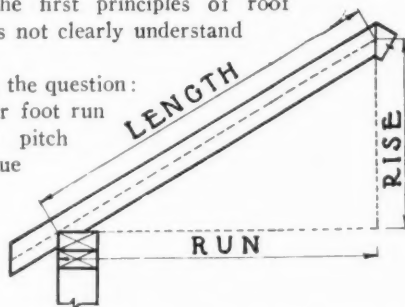


Fig. 2. By the "Run" Is Meant the Horizontal Distance Which the Rafter Covers.

Questions and Answers on Roof Framing

Question—What is meant by the "pitch" of a roof?

Answer—By the "pitch" of a roof we mean the grade or degree of slope of the roof.

Question—By what method is the "pitch" of a roof given or described?

Answer—There are several ways. One method is to compare the total height of the roof by the width of the building. This method of giving the pitch of the roof we may assume was adopted and used by early builders before accurate methods of figuring roofs were ever thought of. It may have been used to describe the pitch or slope of tents and huts. To explain this method of indicating the pitch of a building let us assume that we had a building 18 feet wide and the height of the roof was 9 feet above the side wall. This roof would be half as high as it is wide and would be called a half pitch roof.

If we have a building 18 feet wide and 6 feet high from the top of the side wall to the top of the roof, we would call it

THE SATURDAY EVENING POST

There—on page six—was the idea for remodeling our old house!

Do you realize the artistic possibilities of your old house?

Barrett Roofings

Full-page advertisements in Saturday Evening Post.
Extensive advertising in leading farm papers and newspapers.

Build Up Your Alteration Business

(Barrett Advertising Leads the Way)

Here is a nation-wide campaign that is showing people how they can improve their homes by practical, worth while alterations.

Advertisements appearing in the Saturday Evening Post, leading farm papers, and 59 newspapers all over the country—all hitting at this one idea. People in your own community are saying to themselves, "Wonder if my shabby old house doesn't need fixing up, too?"

Behind this campaign stands The Barrett Book, "Better Homes from Old Houses"—a book full of ideas for alterations. Prepared by a staff of leading architects, it is authentic in every detail. It's a book of suggestions—not of working plans.

This free book has built up alter-

ation business for carpenter-contractors all over the country. Right in your own town are lots of old houses that could easily be improved. Your big trouble is getting the owners to think and talk "alterations."

Make a list of every homely, out-of-date house in your town! Distribute the "Better Homes from Old Houses" book to the owners of all of these houses. Put copies in the waiting rooms of doctors' and dentists' offices—in the public library. Let people connect your name with this alteration campaign.

Some house-owners will send for you to talk plans and costs of alterations. A goodly number will go through with the job now—others later. This is building business.

MAIL COUPON TODAY



Get your free sample copy of this book. Fill out the coupon, giving your name and address, also name and address of your building supply dealer.

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THE BARRETT COMPANY 40 Rector St., New York

Please send me free sample copy of your business-building book—"Better Homes from Old Houses." The address of my building supply dealer is given below.

Your Name.....
Street Address.....
Town.....State.....
Your Dealer's Name.....
Dealer's Address.....

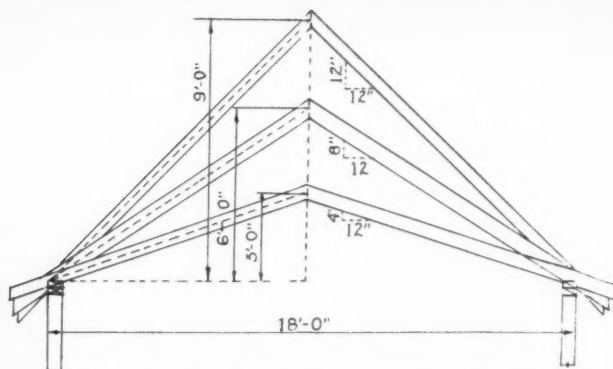


Fig. 3. How Roofs of the Same Width May Have Different Pitches, Depending Upon the Height of the Roof.

a one-third pitch roof, because it is one-third as high as it is wide.

The width of the building or roof is usually called the "span" and the height from the top of the plate to the ridge is called the "rise."

To get the pitch of the roof, we divide the height by the width, or, as usually stated, "divide the rise by the span." In the first example, the rise is 9 feet and the span 18; 9 is $\frac{1}{2}$ of 18, or $\frac{1}{2} = \frac{1}{2}$. The pitch is $\frac{1}{2}$.

Question—What other method is there of describing or stating the pitch of a roof?

Answer—Another method now commonly used is to state the rise of the rafter per foot of run. By the "run" of the rafter we mean the horizontal distance that the rafter covers. This is illustrated in Fig. 5.

By this method we say a roof has an 8-inch rise per foot run, or a roof has a 9-inch rise per foot run. In Fig. 6 we indicate the various pitches in this way.

Take, for example, the rafters shown in this illustration having a 6-foot rise. The building is 18 feet wide, but one rafter only covers a horizontal distance of 9 feet, therefore the run of the rafter is 9 feet and the rise is 6 feet. For every foot of run the rise would be $\frac{1}{3}$ of 6 feet or 6 feet divided by 9 equals $\frac{2}{3}$ foot, or 8 inches. This rafter, therefore, has an 8-inch rise per foot run.

Question—What is the pitch of a roof 18 feet wide and 3 feet high, expressing it in both ways?

Answer—The pitch expressed as a ratio of the rise to the span is 3 divided by 18 equals $\frac{1}{6}$ equals $\frac{1}{6}$ pitch.

The pitch expressed as the rise per foot run is found by dividing 3 feet or 36 inches by 9, because the run is 9 feet. Thirty-six inches divided by 9 equals 4, therefore the rise per foot run is 4 inches. This is illustrated by the lower set of rafters in Fig. 5.

Question—What would be the rise per foot run for a one-half pitch?

Answer—For a one-half pitch the rise is one-half of the span and as the run is one-half of the span, therefore the rise would equal the run, or, in other words, for every foot of run we would have one foot of rise. A one-half pitch roof has a 12-inch rise per foot run.

Question—What would be the pitch (expressed as a ratio of the rise to the span) of a roof that has a 9-inch rise per foot run?

Answer—If the rise is 9 inches per foot run then the total rise of the roof is $\frac{9}{12}$ of the total run or $\frac{9}{24}$ of the total span because the span is twice as much as the rise. The pitch, therefore is $\frac{9}{24}$ or $\frac{3}{8}$.

Problems

1. A lean-to roof has a run of 10 feet and a rise of $2\frac{1}{2}$ feet. What is the rise per foot run?
2. A roof for a building 28 feet wide is to have a one-fourth pitch roof. What is the total rise?

3. What is the rise per foot of a three-eighths pitch roof?
4. A roof 36 feet wide has a rise per foot run of 8 inches. What is the total rise?
5. What is the pitch of a roof 24 feet wide and 11 feet high?

Answers

1. If the total rise is $2\frac{1}{2}$ feet and the total run is 10 feet, then the rise of 1 foot of run is $2\frac{1}{2}$ feet divided by 10; $2\frac{1}{2}$ feet is equal to 30 inches.

$$\text{Therefore rise per foot run} = \frac{30}{10} = 3 \text{ inches.}$$

2. If the building is 2 feet wide and one-fourth pitch, then the total rise is $\frac{1}{4}$ of 38 equals 7 feet.

3. In a three-eighths pitch roof the rise is three-eighths of the span and as the run is one-half of the span, then the rise is three-fourths of the run. If the total rise is three-fourths of the total run, then the rise per foot run is also three-fourths of 1 foot. Three-fourths of 12 is 9, therefore the rise per foot run is 9 inches.

4. The building is 36 feet wide or has a run of 18 feet. The

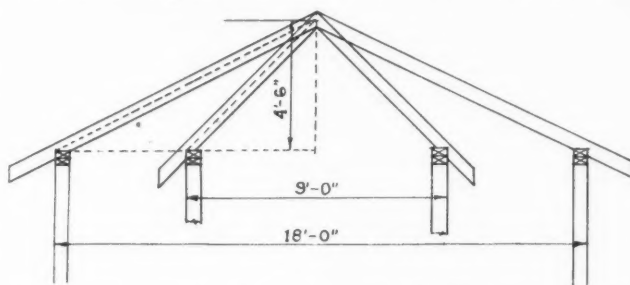


Fig. 4. How Roofs of the Same Height May Have Different Pitches, Depending Upon the Width of the Roof.

rise per foot run is 8 inches. The total rise is 18 times 8 equals 144 inches equals 12 feet.

5. The pitch of a roof 24 feet wide and 11 feet high is $\frac{11}{24}$. The rise is 11 inches per foot run.



Detail 1—Basement Windows

(Continued from page 146.)

giving each piece a grip on the plate but not necessarily on the foundation.

Figures 1, 2 and 3 show different base construction and there are other combinations. The base line with any siding should be distinct and at a proper distance from the grade. The house should not ride high or appear overloaded. The depth of the window from the face of the wall also has its point in appearance. Basement windows deep from without are shadowed and harborers of dirt. Trim, dirty from rain splash, is harder to avoid than dirty windows. Shallow reveals make the window harder to reach from within the basement, but this can be helped by easing the wall back of the sill. By all means use screens. Steel sash is not included in these drawings. Neither are scuttles. The first have easily won a place in house building and some types of the second are still going strong against their competitor the oil pipe. Plain and glazed coal chute windows are now too common to need explanation.



Annual Lime Convention

THE Seventh Annual Convention of the National Lime Association and the Twenty-third Annual Meeting of Lime Manufacturers will be held from May 26 to 29 inclusive at Briarcliff Lodge, Briarcliff Manor, Westchester County, N. Y. The mornings and some of the evenings will be devoted to reports of last year's work, results of fellowships and talks on manufacturing problems. A round table conference will be held on one evening.

The new *bronze mosaic* roof

*Richardson
recommends it
especially
for a house
of tan brick*



You've never seen this bronze mosaic coloring on a roof.

But some Fall you've come upon a woodland clearing when red oak leaves have just been blown upon the frost-browned grass. That is the coloring of this roof—an unstudied blend of rich reds and soft browns.

Frankly, the bronze mosaic roof is not one for a white house, or a house painted canary yellow. On a darker house it is unusually beautiful; particularly on one of tan brick, with a contrasting trim. Here, it blends in perfect harmony with the house itself; it makes the roof and body one.

This distinctive Richardson Multicrome Roof is formed of shingles on each of which are blended in endless variety slate flakes of tile red and Richardson's rare weathered brown. The bronze mosaic effect is secured by applying them just as they come from the bundle. No sorting nor special work in laying is necessary.

Other rich blends of color

This, however, is but one example of the beauty secured in Richardson Multicrome Roofs. The opal roof, for instance, is similarly formed with weathered brown and jade green



© 1925, The Richardson Company

slate flakes. It is particularly good-looking on a house of creamy stucco.

There are other new colorings, too; likewise suited to different types of homes.

Before you build, before you re-roof; by all means see these new roof colorings. One of them can give your home the distinction and charm you have always wanted. It is all-important, of course, that the coloring of the roof be in harmony with the rest of the house. Only then can it contribute its full share of beauty to your home.


To help you choose

To help you choose the roof which will make the most of this opportunity we have prepared an authoritative booklet fully illustrated in color. It shows page after page of beautiful homes in different architectural styles. And with the Richardson Harmonizer which it contains you can see the complete effect of 54


different combinations of body, trim and roof colors. The booklet also gives valuable information on the principles of any harmonious color scheme. It is called "What Color for the Roof?" The price is twenty-five cents. Send for your copy of this booklet today.

*See the new colors
at your dealer's*

Go to your nearest dealer in lumber, hardware or building materials. Ask him to show you these and other beautiful Richardson color effects in solid as well as blended tones. Ask him, too, why the points mentioned in the panel at the left make their beauty lasting.



**Richardson
Multicrome
Roof**



**Ordinary
Roof**

The Multicrome Roof is built of Richardson Super-Giant Shingles—extra large, extra heavy. Its 50% greater thickness adds both beauty of texture and years of endurance. Its base is sturdy, long-fibre Richardson felt. Its waterproofing is Viskalt—99.8% pure bitumen, especially vacuum-processed. Its surface is slate in close, overlapping flakes—further protection against weather and fire hazards.

The Richardson Multicrome Roof represents the maximum roof value at a moderate price. It is economical to lay and equally good for new or over-the-old-roof jobs.

The **RICHARDSON COMPANY**
Lockland (Cincinnati) Ohio

Chicago New York City (1008 Fisk Bldg.)
Atlanta New Orleans Dallas
63 Albany St., Cambridge (Boston) Mass.



The Richardson Company
Lockland, Ohio
Enclosed find 25c (stamps or coin).
Send me your new booklet, *What Color for the Roof?*
Name.....
Street.....
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☐ Check here if you want the free booklet, *A Richardson Product for Every Roofing Need.*

RICHARDSON ROOFING

TO HELP YOU BUILD —AND SELL

AS You know, beauty is a real selling asset to any house. With the new colorings in Richardson Multicrome Roofs, you can secure effects of a beauty hitherto obtainable only in the most expensive roofing materials.

And they are already sold to your prospects by advertisements like the one reproduced on the other side of this page.

Notice especially the new Richardson booklet, *What Color for the Roof?* described there. It will be a real help to you, both in building and in selling homes.

This valuable book is *free* to builders. Every progressive builder will want one. Send for your copy today. Just write us on your letter-head, asking for it.

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Better Plastering

Introducing a Series of Authoritative Articles on This Important Subject

REAMS and reams have been written about the need for more permanent construction. Singularly most of these dissertations have emphasized the desirability of permanent exteriors, and those that require a minimum of upkeep. Very little has been said of the urgent need of a permanent interior finish for the house, and yet in many buildings much more thought must be given to the upkeep of the interior, after the first two or three years, than for the outer walls of the building.

Four thousand years ago, the plasterer ranked with the sculptor and artist in the pride which he took in the artistry and permanence of his work. As a matter of fact, much of our knowledge of the history and customs of the ancients is revealed by records wrought into the work of these ancient craftsmen.

Plastering should be an art today just as it was in those bygone days, but only occasionally do we find plaster surfaces rivaling the permanence and beauty of those of centuries ago. Our craftsmen of today are just as capable, although their art is expressed in simple effects that are none the less attractive, than the masterpieces of the 15th century. As a matter of fact, modern methods have simplified their work and permanence is achieved in days, instead of weeks and months with our present-day materials which were unknown in earlier times.

Consider further that 80 per cent of the visible interior of the average home is represented by the plastered surfaces. They are always before the eye of the home owner and the visitor. They are the background for the decorations and furnishings, and inasmuch as the character of the completed interior is recognized as an index of the characteristics of the occupants of the home, the housewife takes keenest interest in the appearance of the interior. Is it not strange, then, that more thought has not been given heretofore toward informing builders and the building public on methods of securing plaster walls which will maintain their original beauty and thus afford permanence to the background of the interior.

Nor is the subject as simple as at first blush it might seem to be. Many factors enter into the problem of better plastering, and it will be the purpose of this series of articles to discuss their relationship, how to avoid the pitfalls of poor plastering and how to secure permanent, crack-proof and fire resistive plastered surfaces.

This article, then, will be preliminary to complete discussions, which will appear in later issues of the AMERICAN BUILDER, of the various factors which enter into the problems and they will now be mentioned briefly in order to obtain a general idea of their scope.

In the first place, plastering is subjected to vibration,

temperature changes, moisture and stresses. As one walks through the home, vibrations are transmitted to the ceilings below and to the walls. When doors and windows slam, the plastering is jarred. During a high wind the whole house is subjected to vibration.

Vibrations in temperature subject plastering to extremes which test its endurance as does no other single element. When the temperature in the house changes from daytime's comfortable warmth to the chill of a winter night the plastering tends to shrink, and as the heat comes on in the morning, the plastering tends to expand. Similar variations during the heat of the summer, although not perhaps

of such large magnitude as in wintry weather, also constitute a severe test of plaster and clearly show that a strong base is needed to reinforce the plaster against such disruptive action.

Consider next the question of moisture. In two rooms in the house, the kitchen and bathroom, moisture is more prevalent than on other parts of the home. All plaster is more or less absorptive and the moisture is conducted through the plaster into the base. If this is of an absorptive nature also, it will have a tendency to swell or warp, and subsequently to shrink. Because of the low tensile strength of the plaster, endurance is severely taxed both in the swelling and drying out processes.

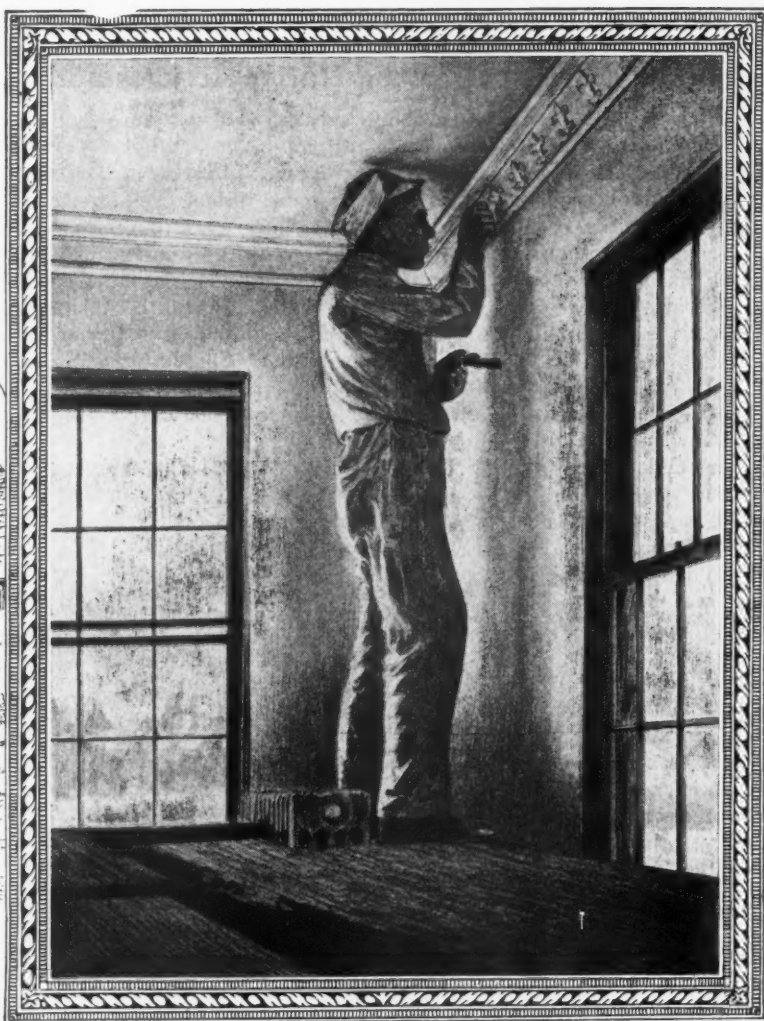
Shrinkage is a factor which again comes into play when the partly seasoned lumber dries out, as artificial heat is supplied during the heating season. There are ways of counteracting the influence of shrinkage which puts a severe strain on the plastering, and these will be discussed subsequently.

Wind stresses have a tendency to rack buildings, especially those having a wood structural frame. If the building is not properly constructed and braced, wood studs and joists will sway and give, and here again stresses are conveyed to the plaster which, if not reinforced, will crack. The stability which we admire in older buildings is due to the plentiful use of substantial and permanent materials. The Romans and Egyptians built thick, solid, masonry walls. Later, as material was conserved, the walls were made thinner and then the hollow wall came into use. In this country with our virgin forests of unmeasureable vastness, masonry walls, because of their relative greater cost, were, in the early days, largely supplanted by walls of heavy timber. Now, however, the timber supply is measureable; the forests in the Eastern and Central states have almost vanished. Those of the Southern states are showing results of the vast inroads of the construction industry and our greatest source of timber is now in the far

(Continued to page 206.)



Since Eighty Per Cent of the Visible Interior of the Average House Is Plastered Surface, Plastering Is an All Important Factor in Establishing Permanent Beauty.



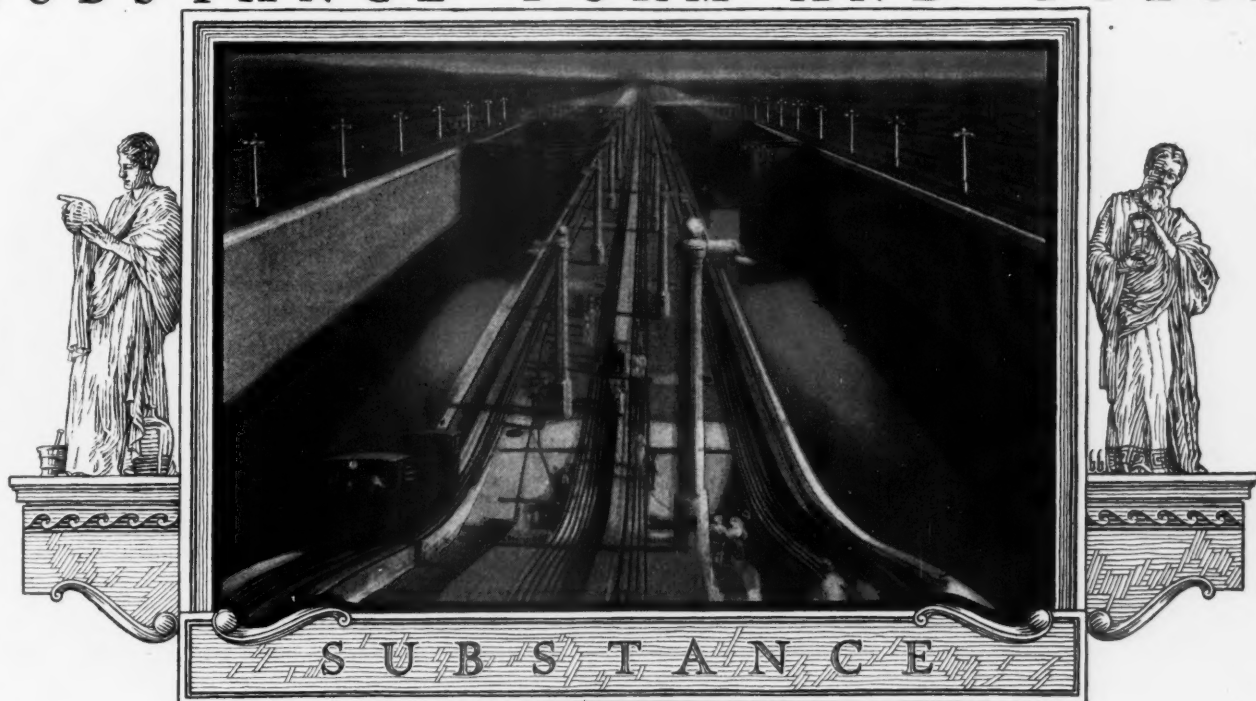
Uniform high quality, maintained for more than a quarter century, has made *Tiger Finish* first choice of builder and plasterer.

Greater coverage, easy spreading and the fact that putty left in the box can be re-mixed, are practical reasons for the nationwide preference for *Tiger Finish*.

The Kelley Island Lime & Transport Co.
World's Largest Producer of Lime
Leader-News Building
CLEVELAND

TIGER FINISH WALLS

S U B S T A N C E · F O R M · A N D · C O L O R



The largest single order of Portland Cement ever placed was for Atlas

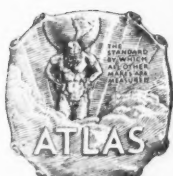


WHEN the United States Government bought the cement for the Panama Canal—over 8,000,000 barrels—Atlas was selected for two reasons. First, the substance, the quality of the product. Daily tests were made by the Government over an eight year period and not a single barrel of Atlas was rejected.

The second reason was the substance, the dependability, of the Atlas organization. Atlas had demonstrated this dependability not only by its size, though size is some indication of merit. But also through Atlas improvements in manufacture, notably the rotary kiln, there had been established a high standard for Portland Cement, quantity production had been made possible, and Portland Cement had become the cheapest of all manufactured products—three most desirable qualities in a material so essential as Atlas.

To concrete's substance, to its adaptability to meet requirements of form and shape, now is added color, not by external and fading coloring matter, but inherent in concrete itself. This makes concrete the complete architectural medium, possessing every essential of the perfect building material. And Atlas Portland Cement, obtainable either in its normal gray or in a pure white color, has been selected as the medium through which this new color development should be accomplished—a still further indication of the many reasons why Atlas is called "the Standard by which all other makes are measured."

Between the Atlas plants and the user there is but one distributor—the building material dealer—who brings Atlas to the public cheaper than by any other method. Any architect, contractor or prospective builder is invited to write this Company regarding the possibilities of concrete, made with Atlas.



Atlas
Portland Cement

The ATLAS Company

PORTLAND CEMENT

25 BROADWAY, NEW YORK, N. Y.

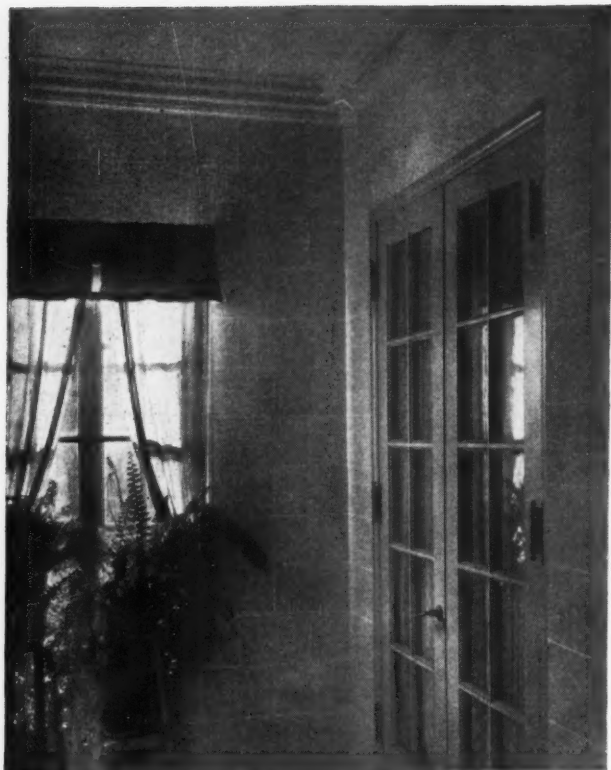
CHICAGO BIRMINGHAM INDEPENDENCE, KANS.

Philadelphia Boston St. Louis Des Moines Dayton Omaha
Buffalo Kansas City Jacksonville, Fla.



Atlas White
Portland Cement

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Though Expressed in Simple Effects, the Plastering Craftsmanship of Today Is no Less Attractive Than the Masterpieces of the Middle Ages.

Western country. This, for the average home, means large freight rates and a relatively large increase in the cost of lumber delivered to the building site. It also means, instead of hand cut timbers, the lighter lumber must be used more sparingly. Our average houses today are not as heavily built or as substantial as those of years ago. Where in the early days the plastering was merely the surface finish applied on the interior surface of rugged timber walls, it is today frequently called upon to reinforce the entire building on account of the light lumber which goes into this structural frame.

Another movement which has come to play an important part in the field of building construction is the demand for fire prevention. Every year \$88,000,000 worth of residence construction is destroyed by fire and over 15,000 lives are lost. Every hour, day and night, 25 residences catch fire.

These many factors of vibration, temperature changes, moisture, wind and loading stresses and fire prevention all play an important part in the discussion of the subject of better plastering. In this series of articles, we will endeavor to present in an interesting way many facts which have hitherto been lost sight of, that the builder and home buying public will have information on this necessary element of home construction which comprises 80 per cent of the visible interior.



Lumber Manufacturers to Meet

THE national convention of the National Lumber Manufacturers' Association will meet at the Congress Hotel, Chicago, on April 27. At the dinner on Tuesday evening the speakers' theme will be the objectives of the observance of American Forest Week.

"Build Up the Home Town" Is the Slogan of a New Nation-Wide Campaign

"THIS town is a good town in which to own a home, work, trade and prosper."

This is the message of the Atlas Boost Your Town-Trade at Home campaign which has just been launched and which, in its entirety, will represent a \$3,000,000 enterprise, all in the interest of town building and helping the retailer to help himself.

Sponsoring this national campaign are twenty of the most representative manufacturers and associations, among them the National Lumber Manufacturers' Association and the American Face Brick Association. These realized the importance of "selling" the home town to its citizens before advancement and prosperity can be realized. They decided that the only way to promote home building, aid the retailer and make for progress in general was to do something to promote community spirit and a desire for a "bigger and better city" among residents of communities everywhere.

The campaign which has been evolved and which is now being launched is complete in every detail, designed to "sell" the home town to its citizens. Nothing has

been eliminated and every phase of advertising and exploitation—the printed word, the spoken word and the screen—have been employed to put over the message of the movement.

"When people are sold the idea of having homes, they will be sold the idea of having homes in this city and they will be sold the idea of buying their material and workmanship for that home right here in this city," is the way one lumber dealer in Rockford, Ill., where the campaign has been started, expressed it.

The campaign is sponsored locally by either newspapers, retail merchants' associations, Chambers of Commerce, the Lion's Clubs International (as the organization is one of the national sponsors) or by some other civic or social group. A representative of the Atlas Educational Film Co. of Oak Park, Ill., producers and distributors of the campaign, assists in organizing the movement locally.

A mat service to newspapers, including a page ad and supplementary publicity, both having to do with community spirit and local loyalty, are provided,



Wesley "Freckles" Barry, Star in Home Boosting Film.

Why Pay Six Men For One Man's Job

Every contractor without an American Universal Floor Surfacing Machine is increasing his payroll by six men every day that he pays for scraping floors by hand. Think what it means to your payroll over a period of a year, and what it would mean in profits over the same year, if you owned an

American Universal FLOOR SURFACING MACHINE

Not Only New Buildings But Old Buildings

must have their floors resurfaced and put in good shape. The increased amount of work in resurfacing old floors in old buildings and homes would add big, extra profits to your contracting business.

YOU ARE THE LOGICAL MAN TO HANDLE THIS BUSINESS

Contractors and builders find the "American Universal" method of floor surfacing a profitable side line to keep the money rolling in the year 'round, besides saving the wages of six men on all of their own work. Send a postal card, write or fill out coupon today and ask for particulars and other valuable information which we will furnish without any obligation on your part whatever.

The American Floor Surfacing Machine Co.

515 So. St. Clair Street, TOLEDO, OHIO



CUT OUT AND MAIL THIS COUPON TODAY

The American Floor Surfacing Machine Co.,
515 South St. Clair Street, Toledo, Ohio

Please send me without any obligation on my part full information about the "American Universal" Floor Surfacing Machine.

- ☐ I am a building contractor.
☐ I am interested in becoming a floor surfacing contractor.

Name.....

Street.....

City.....

State.....



When Welcome Was Waked Up and the People Became "Sold" on Their Home Town, a Wave of Prosperity Arose and Everyone Rode on Its Crest. The rejuvenation of the city was best reflected in the building boom, for new houses went up, old ones were improved and everyone became a substantial, progressive citizen, as set forth in "My Home Town," the Booster film.

running over a period of six or seven weeks.

Then a Civic Booster Week is introduced, the mayor being provided with a proclamation to sign, this being part of the campaign material. The streets and stores are decorated in pennants, flags and bunting; merchants offer booster sales; there are four-color posters, booster windshield stickers in the form of Ima Booster, the campaign girl; booster buttons, auto banners, street car cards and window cards.

The newspapers run a special booster supplement, the mats for the ads and illustrations to stories being provided, while the whole supplement of 20 pages is also provided, in regular newspaper form.

The big feature of the week is the exhibition of the \$100,000 feature motion picture, "My Home Town," starring Wesley "Freckles" Barry, supported by a cast of 200 screen people, which will run at the local theater. This film was produced especially for the campaign by the Atlas Film Company and is a visualization of the message of the booster movement. It tells of the rejuvenation of a town that had been asleep because the people in it had lost interest in it, spent their money elsewhere, and the merchants had likewise lost hope and ambition.

How the town is awakened makes an interesting, human interest story. In the course of the rejuvenation there is shown a building boom. The lumber man is busy and so is the brick man. Numerous buildings go up, stores are improved and the old hotel, about which much of the action transpires, is replaced by a fine new building, the pride of the town.

Now every dollar spent at home comes back to the spender, in part, through taxes paid by the dealer; through wages paid out; advertising fees to local dailies; through contributions to local causes, and through the maintenance of his place of business in a style that makes it an asset to the community.

How belief in a town and its possibilities makes it the mecca for the home seeker and the shopper is strongly emphasized. Throughout the whole story the lumber dealer and the builder, like the plumber and realtor, play their important part. There is a love story and plenty of comedy to make the film an ideal medium of putting over the campaign message.

Following Civic Booster Week, there are seven other newspaper mats in page ads and supplementary stories, in humorous, human interest style, all emphasizing the campaign talk and forming a follow-up. The campaign has only just been launched, but has already been started in Kankakee, Rockford, Alton, Litchfield and Springfield, all Illinois towns.

It is planned to put on the campaign in every city of 15,000 to 100,000 throughout the United States and Canada.

Lumber dealers everywhere are preparing to take advantage of the campaign and its publicity. The booster supplement, provided for newspapers, contains lengthy articles by Mr. E. B. Allen, of the National Lumbermen's Association, another by B. W. Ballou, president of the American Face Brick Association, and by W. K. Glen, of the Crane Company. There are also included a number of model homes and floor plans, the information on same being available, the articles explain, by writing or calling upon local dealers or the national associations.



Old Amos Cushing Was an Out-of-Town Shopper and He Was Property Poor. But when the rest of the town got busy and woke up, the stock of the town went up and Amos found that his land was worth a good sum. The first thing he did was get the "building bug" and fix up his old home, and, of course, the feature of this was the addition of a modern bathroom—scene from "My Home Town," the motion picture made for the Atlas Boost Your Town Trade at Home Campaign.



CORRESPONDENCE

Questions Answered—Ideas Exchanged

A Suggestion on Woodworkers

To the Editor:

Montclair, N. J.

I would like to make a suggestion, as an old subscriber to your publication, and an interested observer of its steady improvement and worth to its readers.

Having had occasion to investigate various kinds of variety woodworkers, some of them offered through the pages of your publication, I have been impressed with the almost universal lack of definite information which the manufacturers of these machines give to the public.

Some of the claims made for operations on these machines are absolutely dangerous to the man working the machine. The practice of manufacturers of omitting to furnish plain and definite information, as to how definite work can be performed, I can only attribute to the probability that they are guided by machine shop practice and not by the requirements of the building trade.

Manufacturers should not lose sight of the fact that each year, through their good advertising of meritorious products, contractors are getting into machine work more and more. In very few cases has the carpenter working in the field had the opportunity to break in as a machine hand on millwork. His shop may decide to purchase some sort of power driven woodworker, either for the shop or for use in the field. It seems, in every group of workmen, that as soon as a new piece of machinery arrives no time must be lost in getting their fingers caught. Let there be sent with every machine plain instructions and do not claim for any machine operations that are dangerous to the help. A few don'ts will not detract from the worth of any piece of apparatus.

I would suggest that you run a series of articles on how to get all there is in these machines for the instruction of the reader who has had no machine experience. You would at once be doing a lot of good for the manufacturers and also helping the fellow in the field.

Trusting that you will open your columns for the foregoing and thanking you in advance. SAMUEL A. MATTER.



Enterprise in Missouri

To the Editor: Boonville, Mo.

Some time ago you gave us some publicity in the way of publishing, or reproducing our float which we arranged at our Bridge celebration. I am mailing you a fairly good picture of our booth at our fall round-up, and at the suggestion of the photographer had my picture snapped and placed in the upper right-hand corner. This round-up is nothing more than a free fair and is put on and financed by the merchants of the town. There are no concessions allowed to any one; everything is free. On the last day the

theater is free, this arranged by the merchants of the town.

While this affords an opportunity to the farmers and fruit growers to show their products, it affords the merchants an opportunity to do some valuable advertising, as well as come in personal contact with his trade.

DASCOMB-DANIELS LUMBER COMPANY,

Earl F. Porter, Local Manager.



Answer to C. W. Harner

To the Editor:

Clinton, Ind.

I wish to submit the following answer to the questions of C. W. Harner, in the February issue.

The figures to use on the square for the plancier cuts for a one-half pitch roof are: 12 and 17 for both face and edge cuts, cut on the 12; for the one-third pitch, 12 and $14\frac{7}{16}$ for the face cut and 8 and $14\frac{7}{16}$ for the edge cut; for one-fourth pitch, 12 and $13\frac{7}{16}$ for the face cut and 6 and $13\frac{7}{16}$ for the edge cut. All cuts are made on the smaller figure.

The rule is to use the run and length for the face cut and the rise and length for the edge cut.

CHAS. M. THOMAS.

EDITOR'S NOTE—Another correspondent, C. A. Carrier, of Rapid City, S. Dak., suggests that a number of simple treatises on the steel square are on the market and that one of these would prove valuable to Mr. Harner. This information can also be obtained from the series, "Instructions in Roof Framing," which has been running in the AMERICAN BUILDER for several months.

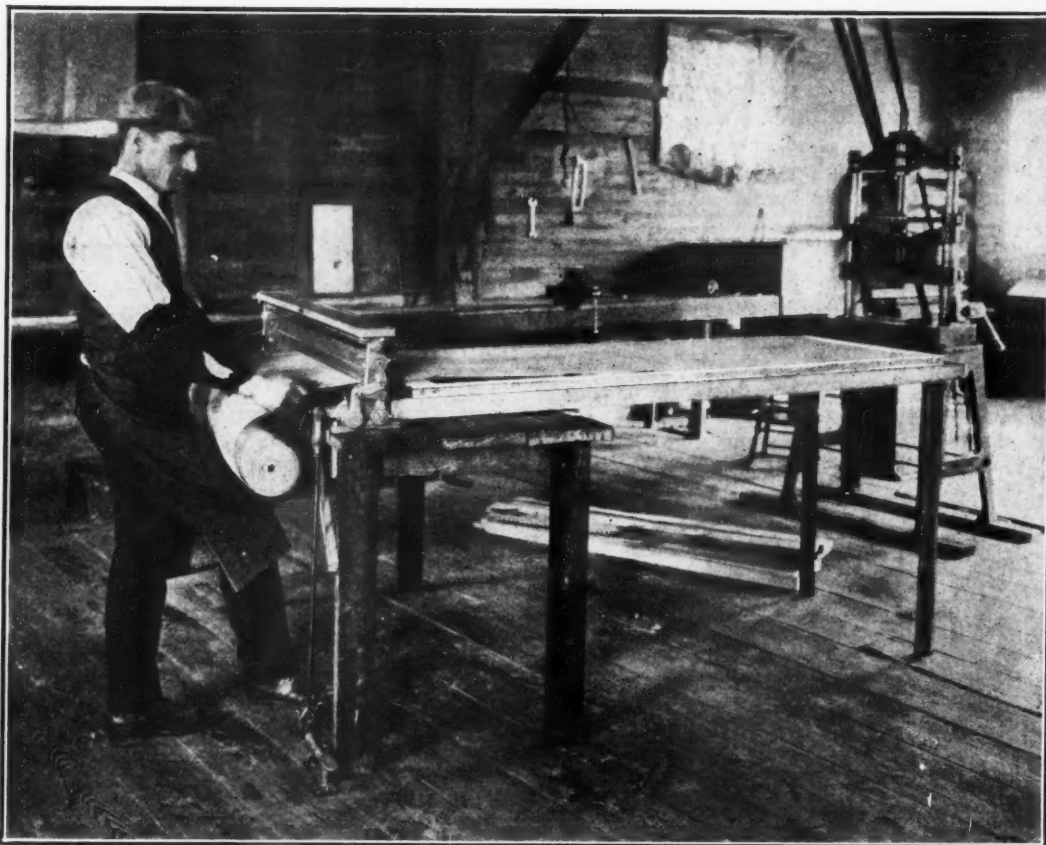


At the "Fall Round-Up" in Boonville, Mo., the Booth of the Dascomb-Daniels Lumber Company Was One of the Live Exhibits and Attracted Wide Attention.

SCREEN WIRE STRETCHER

\$50 F. O. B. Milwaukee

The only convenient and quick operating device for stretching screen wire. It stretches the wire and holds it while tacking, until it is released. It is operated entirely by foot. Make your screen 100% perfect. Will take any width wire up to 48 inches, but can be built larger if desired. Portable and Stationary Models.



A FEW USERS

N. J. HENRY MFG. CO., Brooklyn, N. Y.
ROBERTS SASH & DOOR CO., Chicago, Ill.
CURTIS-YALE-HOLLAND CO., Minneapolis, Minn.

HOLLENBECK BUSH PLANING MILL., Fresno, Cal.
RIECKE CABINET WORKS, New Orleans, La.
WOODRUFF LUMBER CO., Duluth, Minn.

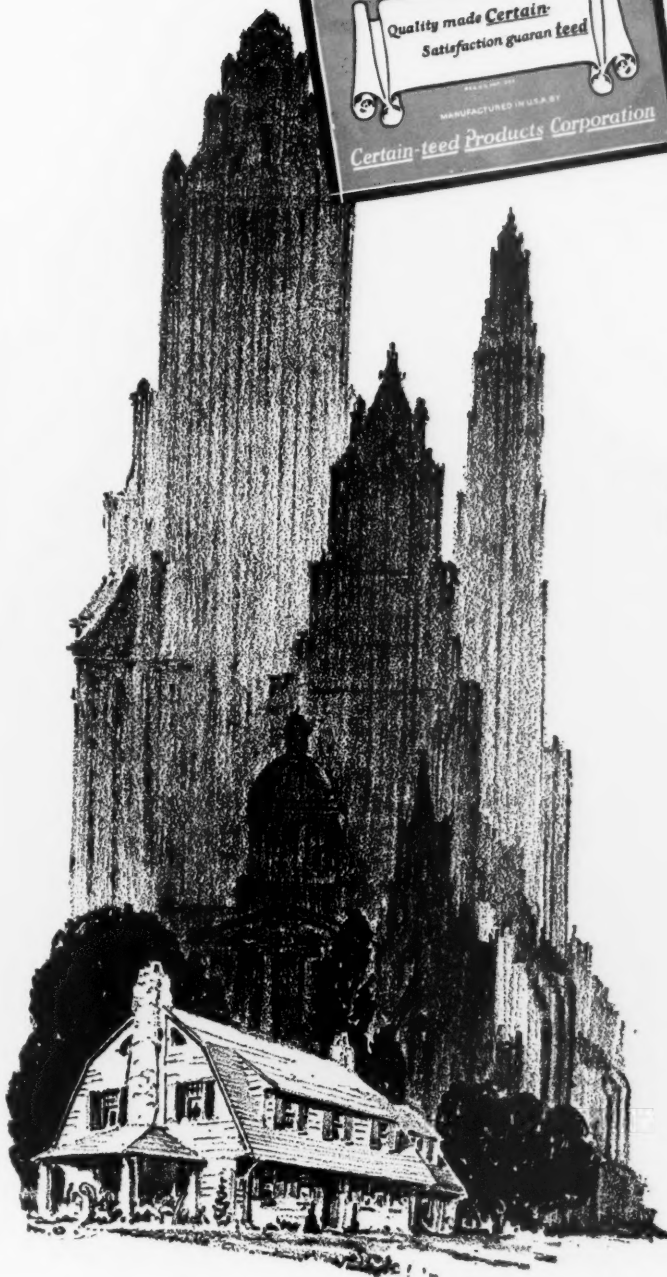
Write for Our Complete Catalog

LOU MARKWELL CO.

75 Steuart Street
SAN FRANCISCO

174 Franklin Street
NEW YORK

SEE OUR "AD" ON PAGE 328



Whatever You Build— Give It The Best

EVERY type of structure deserves the best in building products, just as it deserves the best in workmanship.

In small, attractive homes, as well as in great sky-scrapers, *Certain-teed* Products have given proof everywhere of their satisfactory service. Your customers know the protection and real value assured them by the name, *Certain-teed*. Among its hundred and more associated products, are complete lines of Roofing and Shingles, Plaster and Gypsum Blocks, Linoleum and FLOORTX (felt-base), and Paints and Varnishes.

Because of the enormous output of these lines in modern, strategically placed plants; and because of the nation-wide system of distribution, you are able to secure *Certain-teed* Products quickly, in any amounts required.

For the best in building and related products at minimum cost—Certain-teed

Certain-teed

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

MOTOR TRUCKS and TRAILERS



Prolong Life of Tires

BUILDERS operating motor trucks will be interested in the following points on getting the best results from tires.

1. Light and heat are the worst enemies of rubber. Spare tires should be kept in a dark, cool place and should be protected from dust and moisture.

2. Talc should be dusted over shoes and tubes. If tubes are folded, they should occasionally be opened and refolded in order to prevent the formation of creases.

3. When crossing broken stones withdraw clutch and coast over. Driving the truck over such a surface will force the tires against the sharp edges, and cutting is more liable to result than if the tire rolls over them.

4. Never apply the brakes with such force that the wheels will slip. If wheels are locked, much of the retarding effect is lost and much rubber is ground from the tires. On muddy roads or pavements, all control over the car may be lost.

5. Wet rubber cuts much more easily than dry. In wet weather, sharp stones, car tracks or stray bits of glass or metal may cause serious damage to tires, while in dry weather they might have but the least effect, if any. A careful driver avoids them at all times, but is especially cautious when the roads are wet.



The Dump Body Truck Is an Essential Piece of Equipment for the Contractor Who Must Handle Large Quantities of Bulk Material and a Wide Range of Sizes Make It Adaptable to Any Individual Needs.

Change Oil Frequently

THE necessity for regularly changing the oil in the motor truck crankcase cannot be over-emphasized.

Above all, the truck operator should understand that the practice of continually adding oil without draining old oil out, is detrimental to the engine. It can be readily seen that a quantity of clean oil, added to an equal or even smaller quantity of dirty oil always makes a resulting quantity of dirty oil.

For best results, it is advisable to change oil once every 500 to 800 miles. Remove the drain plug at the bottom of the crankcase and let the old oil run out. You will notice it is very dirty and invariably full of grit. Then replace the plug and pour in a gallon of light flushing oil (any light oil will serve the purpose). Run the motor for about half a minute in order to flush the bearings and thoroughly clean out the motor. Next drain the flushing oil from the crankcase. Frequently it is necessary to jack up the car or run it on an incline in order to drain the crankcase thoroughly. Replace the plug and refill the crankcase with the correct grade of lubricating oil. As to the amount of oil maintained in the crankcase, it is well to remember that there is a happy medium, since the truck will not perform without any at all and since too much oil will work into

the combustion chamber, producing carbon and fouling the plugs. Keep the crankcase filled to the oil level. It is a good plan to save old oil when drained out and to filter it through a felt hat for use in oiling springs and other parts of the truck.

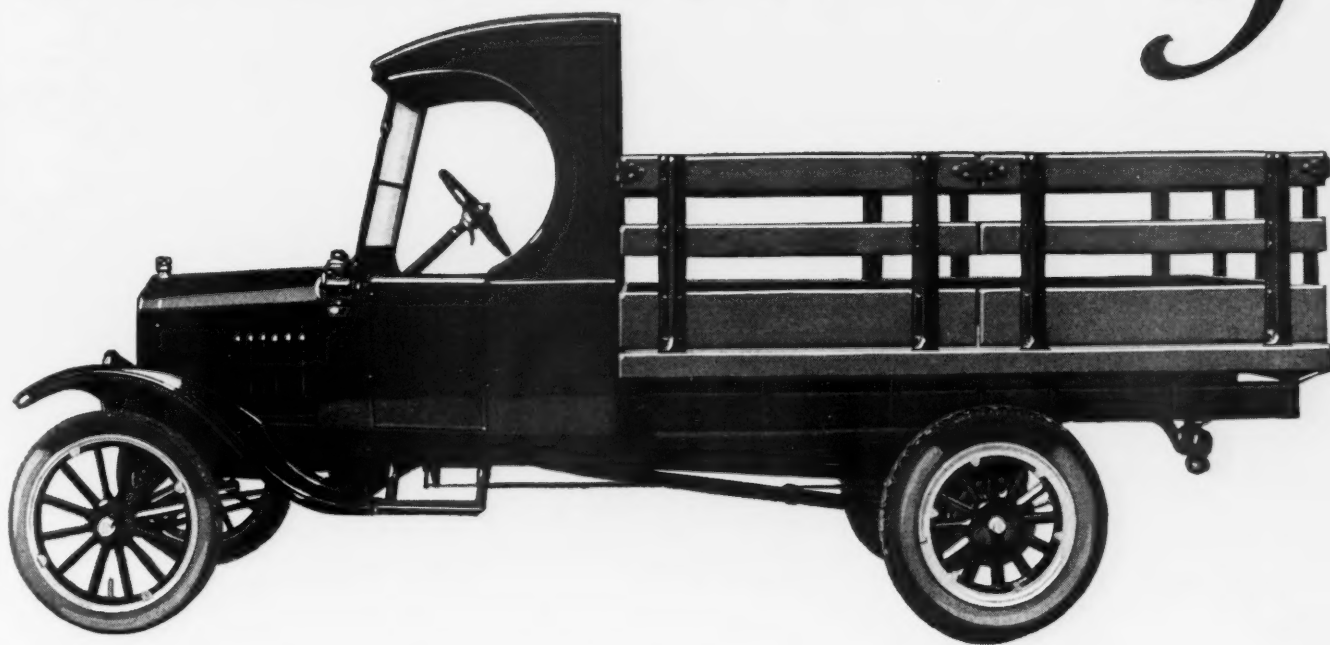


How to Prevent Skidding

WHEN a truck skids the tendency is for an inexperienced driver to apply the brakes and turn the front wheels in the opposite direction to that in which he is skidding. This should not be done as it only accentuates the skidding and the truck may be ditched or skid into another vehicle or the curbing. When the machine starts to skid turn the steering wheels in the direction in which the truck is skidding and partially close the

(Continued to page 224.)

Announcing



Ford One Ton Truck With New Stake Body

Now you can buy a stake body mounted on the Ford Ton Chassis as *one complete Ford unit*.

This new product combines wide trucking utility with the operating economy of the Ford Chassis. It is built for hard service.

See it at the show rooms of your nearest Authorized Ford Dealer.

Ford Motor Company
DETROIT

PRICE COMPLETE

\$495

F. O. B. DETROIT

Sturdy all-steel frame.

*Selected well-seasoned wood
used for floors and rack boards.*

*Racks are in five sections and
when latched at corners and
joints give you a body of
extraordinary strength and
durability. The racks are easily
removable to provide a plat-
form truck.*

Ford

throttle but not entirely, or it will have the same effect as applying the brakes. When the truck straightens out the power may be applied gradually and the machine brought back to the center of the road. When skidding on narrow roads it is best to apply the power and steer for the center of the road. This will aggravate the skid for a moment but brings the machine around at an angle with the front wheels in the center of the road. The momentum of the truck will cause the rear wheels to climb back onto the road again.



Care of Truck Springs

BROKEN springs are common and expensive occurrences in motor truck operation. The springs need very little attention—relatively less than most other parts of the machine—yet this does not mean that the operator can afford to neglect them entirely.

Loose spring clips cause the most spring breakdowns and for this reason it is advisable to inspect them occasionally and to tighten when necessary. Quite often a spring clip, even though it has been tightened, will work loose and rattle. In this case, a piece of wire tape, wrapped around the lower part will prevent it from moving.

A squeak from the springs usually indicates a lack of lubrication between the spring leaves. If rust has accumulated, jack up the machine by placing the jack under the frame above the springs, force the spring leaves apart and flush between them with a mixture of kerosene and motor oil. Or they can be coated with a grade of grease made especially for this purpose. In addition to this, it is also necessary to keep the bearings of the spring and shackle bolts properly lubricated.

A great many broken springs may be traced to the practice of overloading. Every part of the machine, including the springs, is designed for certain maximum loading. Exceeding this is bad business, which can be only partly

alleviated by slow speed, which also is bad business, because it wastes time. It is advised that if overloading, or its equivalent in the form of speed or bad roads, seems necessary, extra springs be used.



Truck Brake Lubrication

CONTRARY to the general belief, the brake linings of a motor truck will give better results if lubricated occasionally. If the linings are glazed, they should be cleaned with kerosene, which may be applied with a grease gun. This is allowed to soak for about half an hour, giving a second application if it is necessary. Clean engine oil should then be applied and allowed to soak over night. In the morning, the excess oil should be wiped off. The truck is then started and brakes applied hard several times so as to squeeze out the surplus oil. If this treatment is applied about once in every two months, the brakes will operate silently and effectively and the life of the linings will be considerably prolonged.

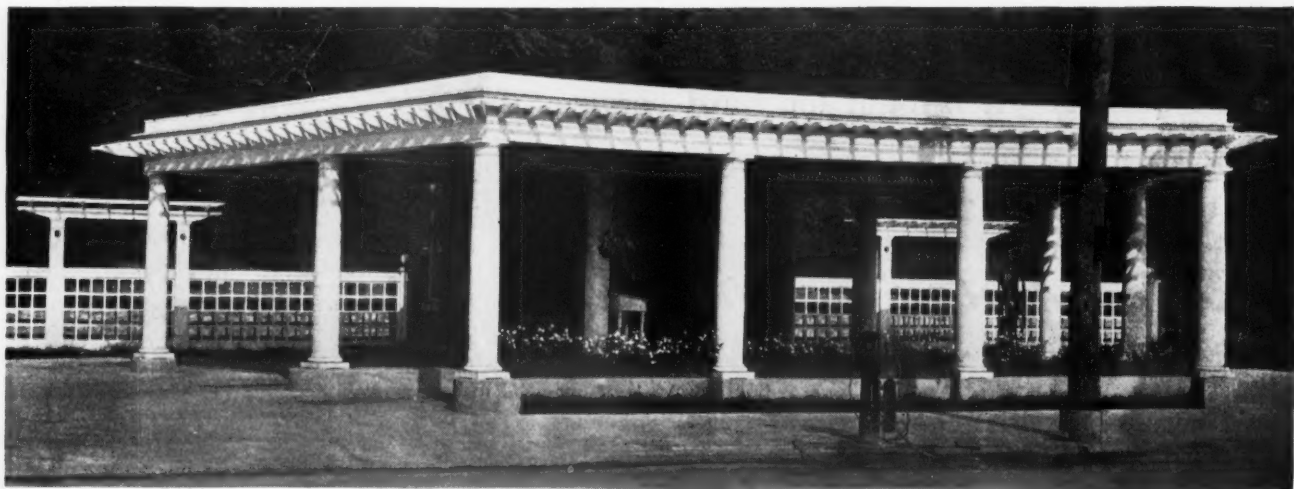


Don't Neglect Magneto

THE magneto of a motor truck requires very little care. It should be kept free from oil, dust and water, and it should be properly lubricated. A few drops of thin oil should be dropped into the bearings about every 5,000 miles. All water, dust or oil should be wiped away from the exterior of the housing so that there may be no danger of their seeping through to the delicate parts. The distributor and timing contact points should be occasionally cleaned. When setting the gap of the contact points, always use the clearance recommended by the makers of the magneto. If there should be excessive arcing at the contact points, it indicates a loose condenser connection or a defective condenser itself.

Filling the Obligation of Beauty

By E. BETHEA MARLOWE



THIS pleasing filling station was built by the Southeastern Oil Company in Chattanooga, Tenn., with the idea of satisfying both the demand of utility and beauty. The structure is a pleasant witness of their success in the effort. For it demonstrates that the filling station, a public utility, can render another service than that of vending oil and gas—it can do this in surroundings that tempt the eye, and that represent another step in the development of civic

beauty which is receiving such earnest attention in the cities and towns of today.

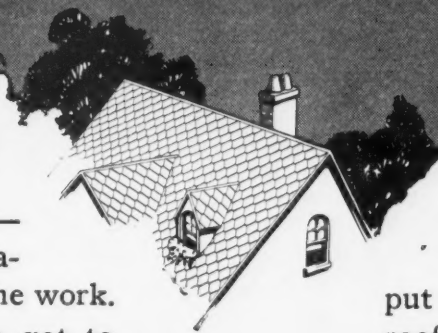
Aside from its attractive architectural idea the station has been given a refreshing air with flowers and grass. The many colored blossoms that bloom along and between the drives give a festive air. Two hanging baskets of fern add their green to demonstrate the whole place makes against the unpleasantness of pure utility.

Layer-on-layer construction makes Eternit Asbestos Shingles *easier to sell...*

YOU know the hard-to-sell man who is "on the fence." He is going to build or rebuild—but he can't decide what materials to use or who shall do the work.

To land his business you've got to show why it should go to you. And when the roofing question comes up, Eternit Asbestos Shingles will swing the contract your way. Because Eternit quality *is easy to prove*.

Show him the layer-on-layer construction of Eternit Asbestos Shingles. Layers of closely woven asbestos fibre reinforced with cement give these shingles their greater



strength. Let him satisfy himself as to their hard, close-pressed, water-proof body—let him put them through every known roofing test. Then, after he has proven their quality for himself, the attractive figure you can quote will do the rest.

You'll get the contract—and the beauty of the finished roof will bring you other jobs. You make a good profit—for Eternit Shingles are priced right and easy to lay. There is money for you in Eternit Asbestos Shingles, whether you build for resale or do contract work. Write us today for full details.

AMERICAN INSULATION COMPANY
Roberts Avenue and Stokley Street, Philadelphia, Pa.

Eternit

ASBESTOS SHINGLES
Make your first roof last

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

ELECTRIFY ALL BUILDINGS

A Department of Up-to-date Information
for all who Plan and Build

The Electric Refrigerator Is Here

Are YOU Including in Your Plans This Acme of Modern Improvements?

By F. J. ST. JOHN

WHAT does the term, "a modern home," suggest to you? How do we determine just when a home is, as we say, strictly modern?

Are there degrees of modernity in homes? Can we say one home is more modern than another, or is the home which has reached the nth degree in the perfection of its equipment the only really modern home?

And when did the term "modern" come into vogue as descriptive of homes? Were the finer colonial homes of one hundred or one hundred and fifty years ago described as modern, as compared with the humbler habitations of the times? It is certain that comparisons and distinctions have been the fashion for a long time, and these comparisons have prevailed up and down the scale just as far, probably, as people were able to discern differences in architecture, construction and equipment.

It is evident that comparisons are inevitable when it comes to the consideration of anybody's home, but it seems that somewhere up the scale must be a type of home that meets fully the requirements set forth for the domicile that is to be completely and unquestionably modern. Broadly speaking, it would seem that the really modern home will be that one which, having met the current requirements as to the style of architecture and character of construction employed, possesses, in addition, the very latest and best in the way of equipment necessary to give the owner the fullest service in the way of comfort, convenience and labor-saving.

One piece of equipment which is receiving considerable attention just now from the thoughtful builder is the electric refrigerator. He can afford to give it attention, for the electric refrigerator for household service has "arrived," in the sense that it can now be furnished for the home, as a finished and dependable piece of equipment, past all experimentation and ready to take its place, along with electric lighting, central heating, running water and other indispensable features of the modern home.

Refrigeration has always been a household problem and many believe that developments along that line have not always kept step with other improvements offered for the comfort of the householder and his family. It was an old problem long before there was any consideration of modern homes as such. You will remember stories of how the old Romans had their slaves pack great masses of snow in wrappings of straw on the Apennine heights and bring it down into Rome to cool the wines that

were served at their feasts. If I am not mistaken, there are spots in that part of the world where they are still carting down masses of snow to provide refrigeration. Snow, ice cool caves and cellars, until just recently have furnished about the only means the housewife had to keep the food supplies cold and save them from spoiling.

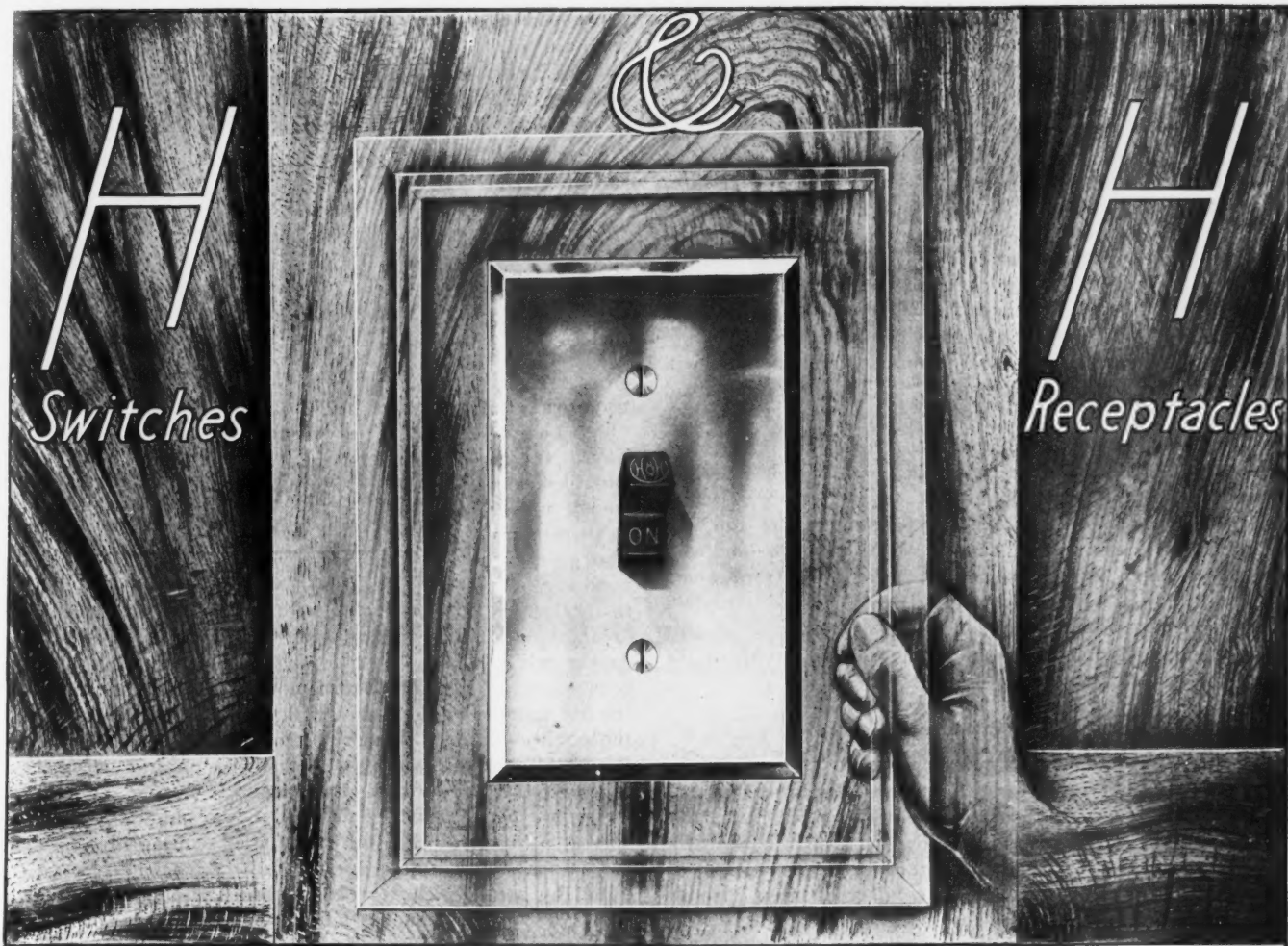
Now electrical refrigeration has come, however, and refrigeration in the home takes on a meaning and an importance that it never had before. For refrigeration never before offered as much to the household as it offers today. With electrical refrigeration the housewife is independent of any outside agency, so long as electric current continues to be available. The housewife who ever had to depend upon a water carrier leaving so much water every day for the household, would appreciate it as she never did before, the convenience and satisfaction of running water at the turn of a faucet.

This is what has come to pass with the development and introduction of electric refrigeration. Ice, the means of refrigeration, heretofore was carried into the house every day. But now, the means of refrigeration is always in the house, by virtue of the electric refrigerating equipment installed in the ice-box. Now, the inside of that box is always cold, colder than it could be kept with ice. The cooling coils that produce the cold never melt, but they produce their cold continuously. They freeze their own ice, too, an abundance of handy-sized cubes, so that there is left nothing to be desired from the standpoint of complete and satisfactory refrigeration, once an electric refrigerator is placed in the kitchen, pantry, or entry way, wherever it is going to be handiest for the housewife herself.

As to the electric refrigerator cabinet, there are two possibilities here. Frequently the refrigerating mechanism and cabinet are built together as a complete unit and are installed that way. Another plan, equally common, is to place the refrigerating mechanism in an ice-box that may have been already in use. In this instance, the set of cooling coils is placed in the usual ice compartment of the refrigerator and the compressor unit, where the refrigerant is cooled and returned to liquid form, is placed in the basement.

The electric refrigerator, of course can be placed anywhere in the kitchen that may be handiest for the housewife. It can be built in, beautifully, with a pantry case

(Continued to page 230.)



A New Show-Switch for "The Latest" in Buildings

HERE again the fact stands out that a fine switch is a focal point in the decorative scheme.

Style on the outside; Balance inside, the new Square Handle Tumbler seems a happy accessory of master designing.

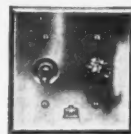
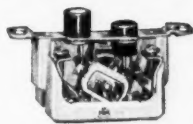
The touch confirms the impression of quality throughout, for back of the handle is the *balanced movement* of the famous "8601" (round handle) Tumbler.

The smoothest, most quiet and pleasing action yet sensed in a tumbler, it suggests more of art than mechanics.

Of Shallow Tumblers, the most durable mechanically; the most positive electrically—and withal, competitive-priced!

In looks, *exclusive*. In cost, so "popular" that any or every job can include it. So as not to confuse with the round-handle style, specify "8601 Square."

THE HART & HEGEMAN MFG. CO. HARTFORD, CONN.



or cupboard arrangement. Or it may stand against the wall in any spot where it will work in best, with relation to the kitchen range, sink and work table. Wherever it is placed, it will afford a most satisfactory degree of refrigeration, handier and more efficient than anything that has ever been offered the housewife before.

Nor is it expensive to operate the electric refrigerator. The cost of electricity is the main item and, where a water-cooled compressor is used, there will be a small additional cost for cooling water. If the compressor is air-cooled, then the only operating expense will be for electricity. In either instance, according to the experiences of many thousands of owners of electric refrigerators already in operation, the cost of running one of these will be no more, month by month, than is ordinarily paid for ice.

The modern home builder, to whom the prospective home owner looks for the latest and best in house design, construction and equipment, will do well to investigate fully the possibilities of electrical refrigeration and the electric refrigerator. He cannot afford to be behindhand in his intimate knowledge of a feature of modern home equipment which is attracting such widespread attention and which is meeting with such general favor as is this newest method of solving an old household problem, the problem of refrigeration.



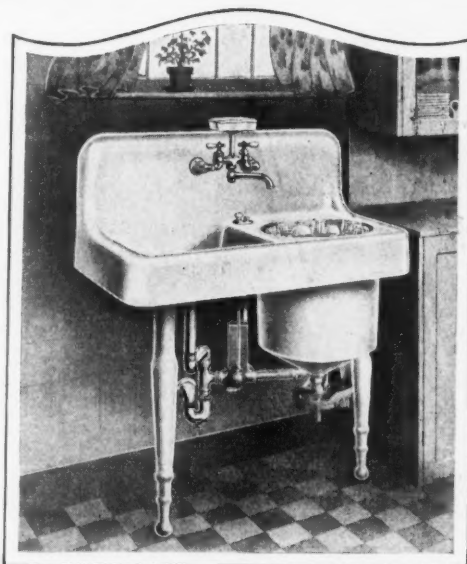
The Electrical Dishwasher

FOR a number of years the electrical dishwasher has been a feature of the completely electrified home and there has been a constant improvement of this valuable labor-saving device. The most recent of these improvements follows along the line of economy of space through built-in equipment. The dishwasher is incorporated as a

part of a standard size porcelain enamel sink. A removable drain board reveals the machine which is one of a line marketed in several models.

Dishes and flat ware are placed in trays inside the tank. These trays and the dishes do not move, so there is no danger of breakage. At the bottom of the tank is a dasher which is operated by a small electric motor. This dasher throws the hot water over the dishes with a swirling motion, which thoroughly cleanses them. When washed the dishes are left in the machine to drain and dry, it being only necessary to polish the glasses and silverware.

The washer is attached directly to the plumbing system so that it can be quickly and easily filled or drained. Power for the motor is obtained from any convenient electrical outlet by means of an extension cord and plug. The sink occupies a space 42 inches long and 22 inches deep.



A Standard Porcelain Enamel Sink Incorporated with Electric Dishwasher Is the Last Word in Kitchen Appliances.

Are you blind to this saving?

One minute,
a Wire-Nut

a perfect electrical joint

By eliminating much of the previous drudgery and clutter necessary when twisting, soldering and taping electrical wires, Wire-Nuts make it possible for the workman to concentrate more attention on the essentials of his work.

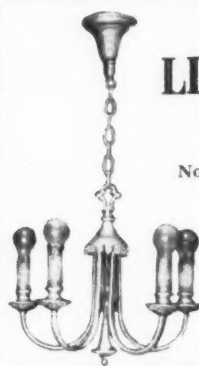
Get your electrical contractor to use Wire-Nuts and be sure of a clean-cut job.

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TORK COMPANY, 8 W. 40th St., New York

Wire-Nuts

Listed by Underwriters' Laboratories
Carried in stock by 250 electrical jobbers



Save 30% on Your LIGHTING FIXTURES

*We serve the builder and
know his needs*

Note our Offer. Satisfaction Guaranteed.

\$28.00 To the
HOME BUILDER

6-room house complete—Ready to install

This series consists of

- | | |
|----------------------------------|-----------------------------------|
| 1 Porch (copper) No. 12. | 1 Kitchen (white enamel) No. 9. |
| 1 Living room (silver) No. 1013. | 1 Hall (silver) No. 10. |
| 1 Dining room (silver) No. 1012. | 1 Bath room (white enamel) No. 2. |
| 3 Bed rooms (Ivory) No. 9. | 1 Cellar Receptacle. |

**GOLAT ELECTRIC CO. 281 MARKET STREET
NEWARK, N. J.**



THE MARVEL THERMOSTAT

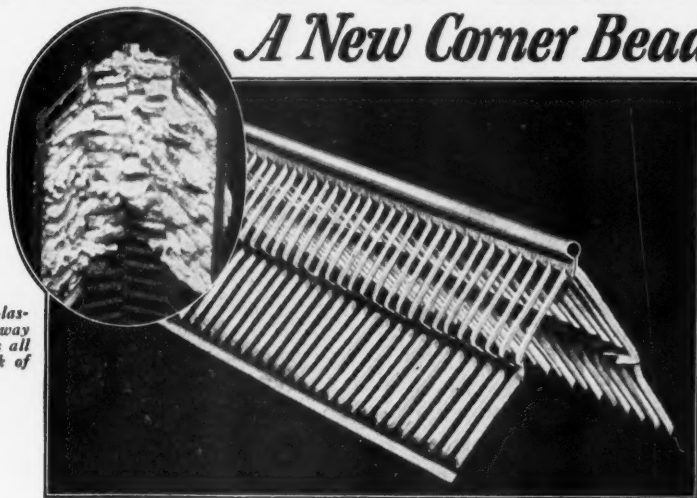
When installing a thermostat in your new home, be satisfied with none but the best. The MARVEL is accurate, dependable and completely automatic. Unreservedly guaranteed.

Write for booklet "N" and prices.

American Thermostat Co.
226 Jelliff Avenue
NEWARK (Est. 1909) NEW JERSEY

PROTEX

A New Corner Bead



Note the strong plaster keys and the way the plaster forms all around and back of the nose.

Reduced photograph of Protex Corner Bead

A Reinforced Protected Corner

Contractors have long been looking for a corner bead that would not only protect the corner but reinforce it as well. Protex bead definitely reinforces the corner and actually produces a stronger plastered surface there than anywhere else in the wall.

Remarkable Rigidity

Protex Bead is rigid lengthwise of the strip as well as crosswise. The wide wings always remain at the proper angle to the nose. The nose is as true as a die with neither up-and-down curves nor in-and-out waves. This unusual rigidity is a decided advantage on the job, making erection easy.

Wide Fastening Surface

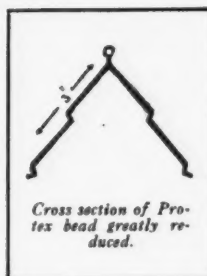
The wide wings—3 inches from center of nose to outside of wings—also make it easy to fasten Protex bead on any kind of a ground. The bead is sim-

ply anchored at the most convenient points. The rib down the center of each wing, together with the outside ribs, gives such great rigidity that a man can place a length of Protex Bead against a corner without any possibility of the bead buckling or twisting.

A Sample Tells the Story

A sample will show you at once that here, at last, is the expanded bead you have long been looking for

and will explain more quickly than words, the exceptional advantages of Protex Bead. Mail the coupon for the sample and you will know that Protex is the corner bead for your next job.



Cross section of Protex bead greatly reduced.



THE YOUNGSTOWN PRESSED STEEL COMPANY

Main Offices and Factories: Warren, Ohio

New York—501 Fifth Ave.
Philadelphia—917 Crozer Bldg.
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Protex Corner Bead can be erected easily and speedily without any possibility of the bead buckling or twisting.

THE YOUNGSTOWN PRESSED STEEL COMPANY Warren, Ohio

I'll be glad to get samples and prices of Protex Bead. Send them to:

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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER





HOW DAN DOES IT.

A Department for Passing "Life Savers" along to other Builders.

\$2 for an Idea

Dan is an ingenious cuss. Nothing ever stumps him. He always knows the way out when he runs into a tough problem out on the job or in the office. Dan is going to edit this Department and will pay \$2.00 each for every good idea he can use here to show and tell other builders "how to do it." Send him a rough sketch and a short description of what the tough job was and how you handled it.

Address Dan-Do-It, care of American Builder, 1827 Prairie Avenue, Chicago, Ill.

Stopping Leaks in Concrete Dam

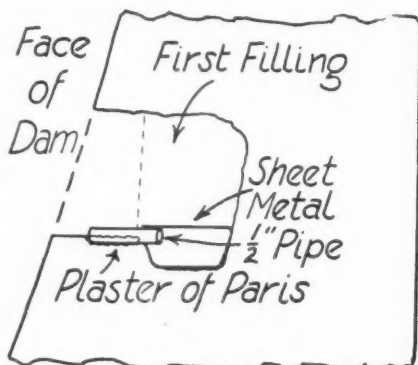
ON the construction of a reinforced concrete dam and spillway, very strict specifications allowed no appreciable loss of water. When work was completed we found leaks caused by concrete becoming honeycombed where wires passed through for the purpose of holding forms in place.

With star drills we followed the wires into the concrete to a depth of 6 to 8 inches, making the holes $1\frac{1}{4}$ inches in diameter and perfectly round. A tight wad of oakum was tamped into the holes to a depth of 2 inches and dry white pine plugs were then driven in, 1 inch past flush, and cemented over after they had swollen sufficiently to stop the leaks.

Twelve holes were stopped this way at the first attempt but this method would not work for two others. After drilling in about 2 inches we found that the concrete where these leaks occurred was badly honeycombed due to a leaky form which permitted the fine aggregates and cement to waste. The extent of the defect was about 18 by 20 by 20 inches and, when all the defective concrete had been removed we found water oozing from a surface as large as two hands.

A miniature lake was cut out of the concrete with a channel for a $\frac{1}{2}$ -inch pipe 8 inches long to communicate with the lake. This pipe extended to within 2 inches of the surface. It was imbedded and a dam formed around it with plaster of Paris, to force the water through the pipe. Next the lake was covered with sheet metal, cut away at the inner edge to allow water to follow down the wall to the lake.

A very rich concrete, extra stiff and thoroughly waterproofed, was then filled into the hole to within 6 inches of



Section at Face of the Dam Showing Method of Placing the Drain Pipe and Sheet Metal Cover.

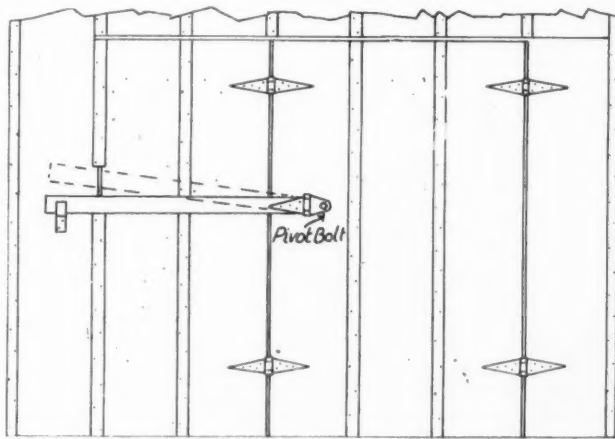
the outer surface. After allowing this first fill to become thoroughly set, we removed the plaster of Paris, carefully coated the first pouring of concrete with cement to insure adhesion, screwed a cap onto the pipe and filled to the surface with concrete mixed as before. This effectively sealed the leaks.—JAMES W. GRAHAM, Newark, Md.



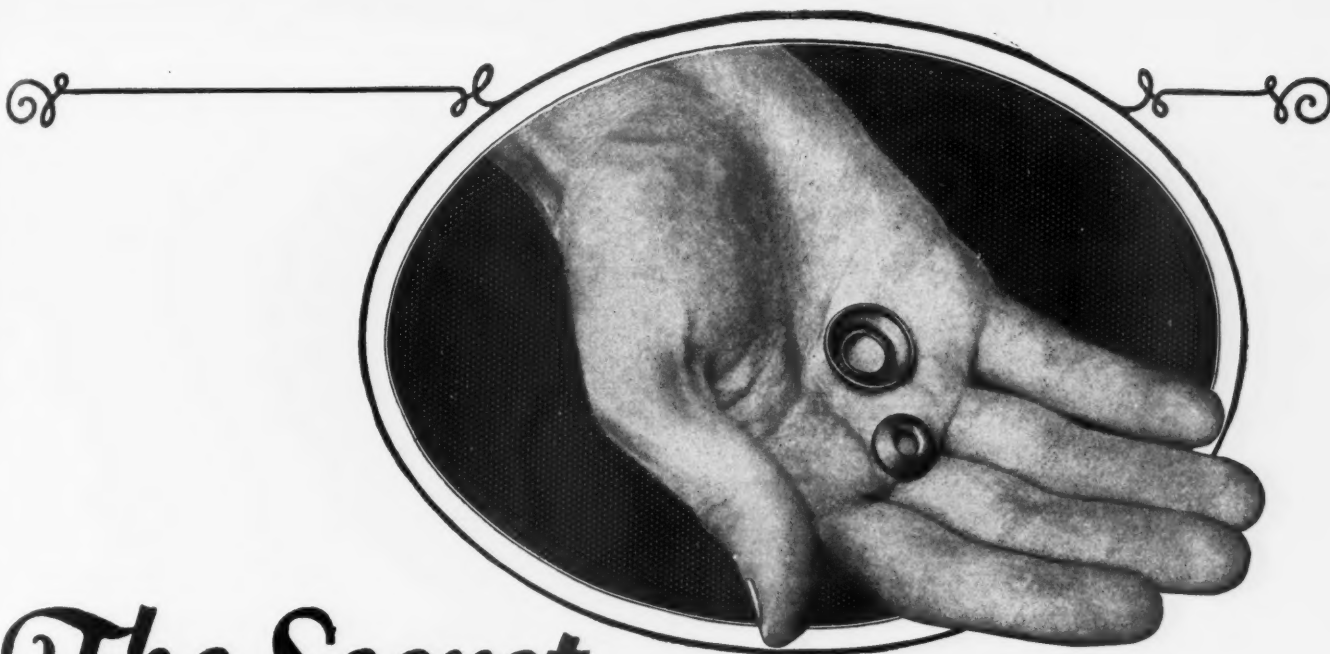
Free Bar for Battened Door

WHERE heavy battens are used on doors having a small door hung on the edge of and as a part of a larger one and using an end-pivotted bar to bar both, one cannot have a satisfactorily tight pivot joint and still have the stiff bar clear the battens when it is desired to drop the bar and open only the smaller door. The solution of the problem lies in providing the bar with the connection shown.

This connection consists of a strap hinge of suitable size, one end of which has been shortened and drilled centrally for a pivot bolt which will attach it to the larger door. The wood bar is attached to the countersunk side of the other end of the hinge. When assembled as shown in the sketch the bar may be lifted out of its hasp, swung out to clear the ends of the cut battens, and then dropped.—LOUIS SCHNEIDER, Clinton, Mo.



Connecting the Bar by Means of a Pivoted Strap Hinge Permits It To Be Swung Out When the Door Is To Be Opened and So Easily Clear the Batten.



The Secret of Life Everlasting

THESE two small repair parts tell practically the whole story of Chicago Faucets. One is the *washer*—the other is the *seat*.

Both are quickly and easily replaced at a cost of *a few cents* in every Chicago Quaturn Faucet.

They are part of our famous Quaturn Renewable Unit (illustrated below), which is standard for all Chicago faucets.

When the seat becomes worn, instead of replacing the whole fixture, as is necessary with the ordinary faucet, all you have to do is replace the seat.

Any faucet leak can be repaired under three minutes at trifling expense.

Chicago Faucets represent a big step forward. The builder who uses them adds to his reputation for *sound building*.

Your request for illustrated catalog and complete information will receive prompt attention.

The Chicago Faucet Co.

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CHICAGO



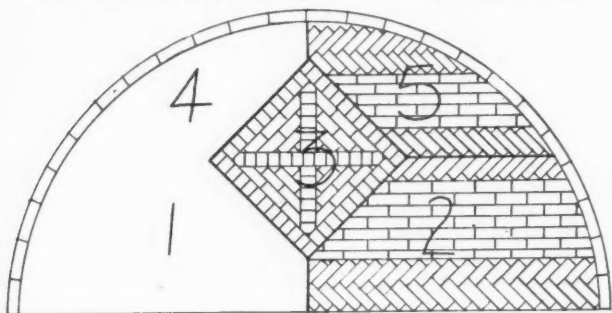
Quaturn
Renewable
Working Unit.
Standardized
for all faucets.
Seat replace-
able as well as
washer.

CHICAGO FAUCETS

Brick Panel Work

IN brick work we often find designs of artistic and intricate panels, bulls-eyes, etc. The cutting of the various shaped brick and the laying up of the same is not only costly but oftentimes holds back part of the work and slows up the whole job.

To overcome this I experimented with building them on the ground on rainy days. The results were very gratifying, as I not only saved 35 per cent in the cost of building them but they were ready to set in place when the proper point was reached, which permitted the line to go up as usual.



This Brick Panel Was Laid on the Ground in Five Sections Which Were All Ready to Put in Place Without Delay When the Wall Reached the Proper Point.

In certain school houses, where I had charge of the brick work, I had a semi-circular panel over each of the four entrances. They were ten inches in width, which of course made them five inches in height. I had a platform constructed out of sheathing, on two by four sleepers, with true surface. On this I drew an actual design of the panel, showing every brick and every joint.

Starting at the bottom, every brick and shape was laid, face downward, on this platform until I had the panel complete.

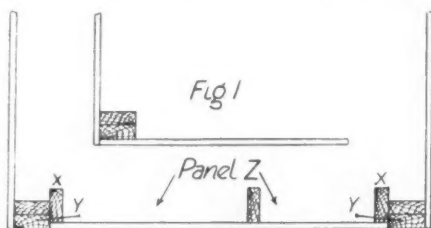
All joints were filled with dry sand to the depth of $\frac{1}{2}$ inch. If brick are soft and porous, wet them. Then fill balance of joints with grout, about $2\frac{1}{2}$ sand to one cement. Plaster back of panel with about $\frac{3}{4}$ inch good cement mortar. Joints, as shown in the sketch, I filled full of sand so that in reality the panel was divided into five sections. Two men could handle any one of these sections when dry. They should set in 36 hours, after which they can be handled like a stone slab. After being set in place in the wall they have to be pointed of course with face mortar.—A. T. NORDSTEDT, Altoona, Pa.



Better Concrete Forms

MOST carpenters set up forms for concrete work as shown in Fig. 1. This is a good strong corner but when it comes to taking it down, one finds out that it is too strong. The sheathing, being nailed to corner posts from both sides is extremely difficult to remove without damaging either sheathing, posts or cement work.

I have been using what I think is a better way to place forms as you can see in diagram. Sheathing in Panel Z is not extended to corner posts but is nailed to posts (X) as shown. Posts (X) are spiked to corner posts as shown. The nails are not driven all the way in but



Above Is the Usual Method of Setting Up Forms While Just Below It Is Shown a Way of Making Corners Which Hold But Can Be Easily Taken Down.

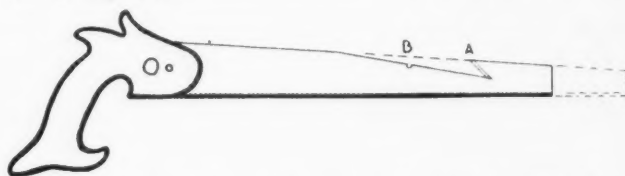
are left projecting about $\frac{1}{2}$ inch.

When taking this form down all that is necessary is to remove spikes (Y). Panel Z can then be removed without damaging forms or concrete and it comes off with the least amount of work.—PAUL HEMPEL, Webster, S. Dak.



Compass-Saw Shingling Tool

HAVING many shingle-roof patching jobs to do, I realized that I needed a tool which would cut, break or pull loose the binding nails as nearly every foot on some courses of some roofs I had to remove and replace a shingle and without such a tool, more damage than anything else resulted. Not finding such a device on the market, except one that weighed five pounds, I devised one of my own.



Here Is a Handy Tool for the Man Who Is Working on a Shingled Roof. It does the sort of work which calls for ingenious home-made methods.

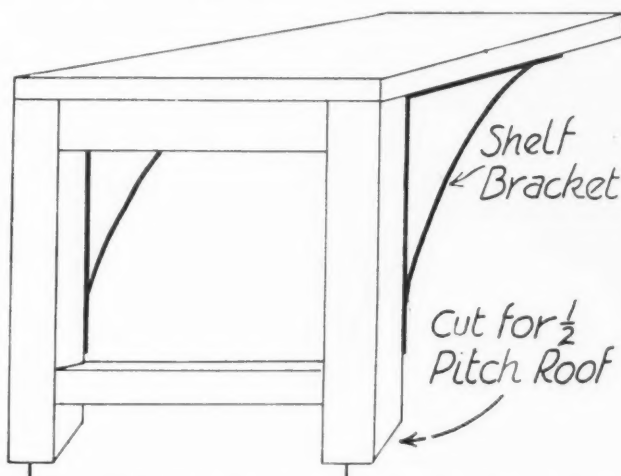
I took a large, discarded compass-saw blade, curtailed and re-shaped it, as shown, then beveled the cutter, A, as indicated. Next I placed it on an anvil and battered flat the remaining teeth so they would not bind against the shingles.

To use this tool it is fastened in the compass-saw handle. The blade is thrust under the shingle that is to be removed and shifted sideways until it engages the nail, somewhere near point B, then a snappy pull does the rest. This method does not disturb adjacent courses of shingles. The compass-saw handle you carry anyway; the blade only weights a few ounces, and it is a handy labor and temper-saving tool—BERT W. CULBERTSON, Jackson, Miss.



Stool for Shingling

EVERY one who shingles very much knows how tiresome it is to shingle setting on a 2 by 4-inch scaffold. I have devised a shingling stool which takes the tiresome feeling out of shingling. It is made of any hard material,



Comfort While Shingling Is Assured if You Provide Yourself with a Bench of This Easily Built Type.

the legs and cross bars should be put together with mortise and tenon. The size is optional but the dimensions given make a very comfortable stool. It should be made so it will sit about level on a one-half inch pitch roof.—SCOTT CARPENTER, Noblesville, Ind.

Clothes and Closets

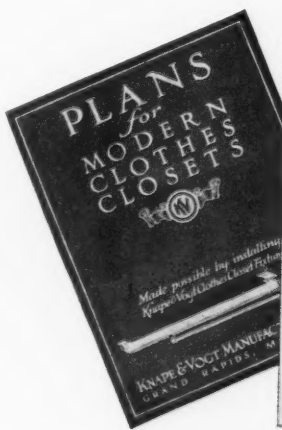


There is nothing closer to a woman's heart

Nothing makes a greater appeal to the housewife than modern, convenient clothes closets. Very often, in fact, they are the determining factor that closes a sale.

Knappe & Vogt Clothes Closet fixtures permit roomier closets in smaller spaces, effect great savings in space and building costs, and provide true modern convenience. Everyone interested in home building will welcome our new booklets showing the attractive, spacious closets made possible by installing these inexpensive fixtures. Send for these informative booklets today. Just return the coupon below.

KNAPE & VOGT MFG. CO.
GRAND RAPIDS, MICHIGAN



Knappe & Vogt fixtures are very inexpensive. They are sold in hardware stores everywhere, but if you are unable to find your local dealer, order from us direct.

PRICES

14 inch.....	\$4.00	22 inch.....	\$5.20
16 inch.....	4.30	24 inch.....	5.50
18 inch.....	4.60	26 inch.....	5.80
20 inch.....	4.90	28 inch.....	6.10

KNAPE & VOGT MFG. CO.,
Grand Rapids, Mich.

Please send me your Free Booklet, "Beautiful Clothes Closets," and your free blue print folder, "Plans for Modern Clothes Closets," showing many different installation plans.

☐ Architect

☐ Contractor

☐ Builder

Name.....

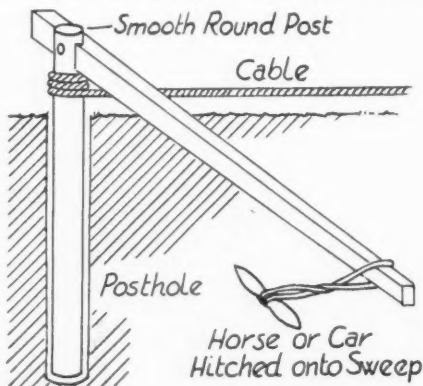
Address.....

City.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Simple Device Moves Buildings

A WISCONSIN carpenter who found it necessary to move a small frame building to make room for a new structure was somewhat handicapped by the lack of a windlass. He solved the problem by constructing a simple capstan. A wagon-tongue was bolted across the top of an 8-inch, round, cedar post. A post-hole was then dug in the ground at a determined point and, by placing the capstan in the hole with a cable connecting same to the building on rollers, the moving was readily accomplished.

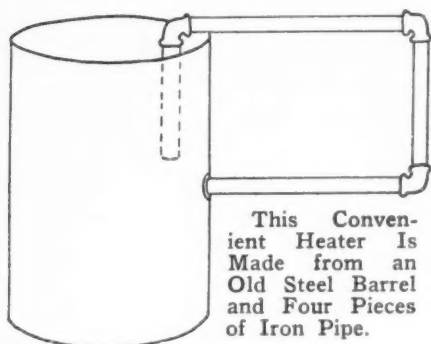


A Hole in the Ground, a Round Post and a Long Pole Form a Capstan Which Enables This Carpenter to Move a Small Frame House by Man Power.

The sweep of the capstan in this particular instance was operated by the workmen, but a horse or an auto could be employed if necessary.—G. E. HENDRICKSON, Argyle, Wis.

To Heat Water for Concrete

IN order to heat water for concrete and brick work we took a steel barrel, with the head out, and attached a 1½-inch pipe to the bung hole, which was already threaded.



This Convenient Heater Is Made from an Old Steel Barrel and Four Pieces of Iron Pipe.

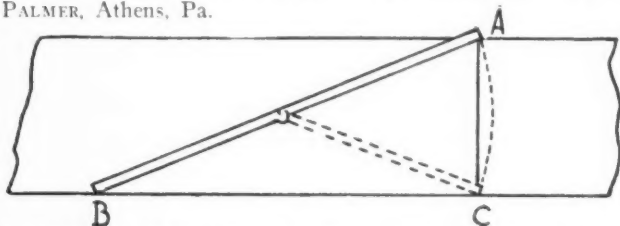
This pipe extended out about 4 feet, then turned up to just above the level of the top of the barrel, again turned toward the barrel and finally down into it. A fire built under this pipe heats the water in the barrel in the same way as a

range boiler attached to a furnace.

It is best to keep the barrel full at all times as the steam in the return pipe heats as much as the water in the pipe. The barrel should sit on the ground but should not be buried as the heat should strike the pipe from below. A kiln can also be built around the pipe to advantage.—Geo. E. SHIPLEY, Anna, Ill.

When You Have No Square

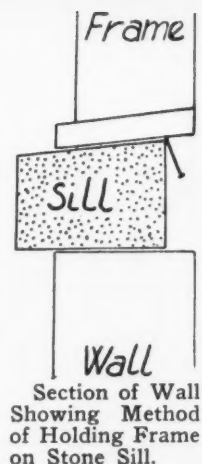
THE accompanying sketch shows the method I have used for years to square a board in the absence of a square. It is simple and efficient. Place a two-foot rule diagonally across the board from A to B then swing rule to joint at C, which will give a perfect square.—A. P. PALMER, Athens, Pa.



An Ordinary Two-Foot Rule Will Serve to Square a Board When No Square Is at Hand.

Anchoring Frames to Sills

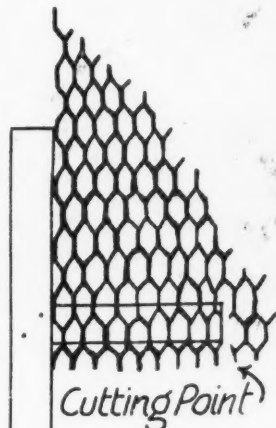
A METHOD of anchoring the bottoms of wooden frames on stone sills, which is a big improvement on piling brick, tile, etc., on the frame to keep it from sliding out, is shown in the sketch. It is also a time saver. It is simply to drive a couple of ten-penny nails into the bottom of the frame at an angle, allowing them to protrude back of the stone sill. When no longer needed the nails can be pulled out without damage to the frame.—A. T. NORDSTEDT, Altoona, Pa.



Section of Wall Showing Method of Holding Frame on Stone Sill.

For Cutting Metal Lath

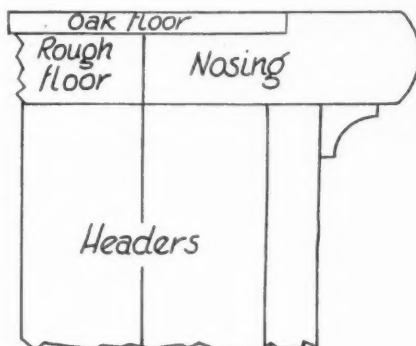
IN working on a job which required cutting some metal lath strip, 3¼ inches wide, from a big sheet, measuring 20 inches wide and 8 feet long, I thought of a gauge and guard to hold in my hand and protect it from the sharp edges of the lath while cutting. This is made from two pieces of lath, one nailed to the other. It is held up tight to sharp edge and the left hand stretched over the top of guard and metal. The snips leaned close to the leg of guard for cutting gauge as shown in the sketch.—JOSEPH W. DINEEN, Rochester, N. Y.



These Two Pieces of Wood Will Protect Your Hands When Cutting Metal Lath.

The Top Nosing

WHEN I lay out my well for stairs I always carry the sub-floor over my first header, leaving the second or front one without. When finishing the stairs I cut my nosing as shown in the diagram, nailing it through on the trimmer. This makes a solid job, allowing you to nail your floor through your nosing. The old method where they were jointed was a failure because in time it generally left a joint. By this method of nailing your floor through your nosing it is there for a lifetime.

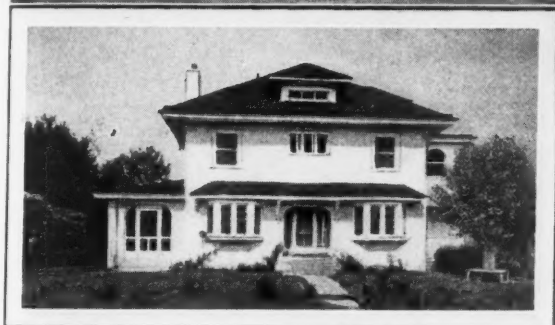


This Method Makes a Solid Job with Joints That Will Not Open from Shrinkage.

It is suggested that the nosing be carried to the second header complete and the rough flooring be placed on the dropped second header with full finished flooring on top.—A. JONES, Rochester, N. Y.



*Mishawaka Woolen Mills, Mishawaka, Ind.
Beautified and waterproofed with StoneTex.
Albert Kahn, Architect*



The StoneTex Color Chart will be sent free to you upon request. It shows in actual colors the pleasing, flat tone finish given to stucco, brick or masonry by StoneTex.



THE TRUSCON LABORATORIES, DETROIT, MICH.
Send me free copy of StoneTex Color Chart and suggestions on:

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| <input type="checkbox"/> Painting Exteriors | <input type="checkbox"/> Stepping Dusting of Concrete Floors |
| <input type="checkbox"/> Preventing Steel Corrosion | <input type="checkbox"/> Daylighting Interiors |
| <input type="checkbox"/> Waterproofing Basements | |

Name.....
Address.....

A. B.-4-25

STONE TEX

Beautifies Concrete

A Waterproof Coating for Concrete, Stucco, Brick or Masonry

The beauty of surface so attractive in newly completed buildings can be preserved with StoneTex. This is not an ordinary paint, but a specially prepared coating which bonds with the surface and protects it against the severest weather. Insurance against costly disintegration is assured to the building whose surfaces are protected with StoneTex.

Truscon Maintenance Service

Truscon Maintenance Engineers will investigate your special problem and return a report to you without cost or obligation on your part.

Return the coupon or write.

THE TRUSCON LABORATORIES
194 Truscon Bldg. DETROIT, MICH.



TRUSCON

MAINTENANCE ENGINEERING

What Makes a Home Modern?

"Dream" or Model Houses Have Adopted First One Item of Perfection and Then Another—the Latest Pertains to SOFT Water

PROBABLY there is not a home building contractor in the country who has not aided in design and construction of homes built "to suit the buyer." Homes of that sort have been called "dream homes," possibly because the man who eventually builds them generally has had the home in mind for a long time before he reaches the place where he can build it to please his fancy. There are thousands of homes of that sort scattered throughout the country, homes that are realizations of the fondest hopes of the men or women who have conceived them and have finally seen them completed.

A short time ago a prominent home builder of the Middle West was talking of "dream homes" he had built. "I've built hundreds of houses of that sort in the years which I have been engaged in this work," he said. "I have had men come to me and tell me that they were going to build a house, that they had the plans in mind and wanted me to help in working out the plans. Sometimes I find plans for other houses I have built which can be modified to suit the tastes of the individual who has visualized the house he wants to build. Sometimes we have no plans that meet the requirements and then we draw up plans based on the ideas and the desires of the man we are striving to please.

"The remarkable thing about these visionary plans, though, is that they are invariably based on sound principles. For the most part, the ideas and principles of construction that are to be embodied in these 'dream homes' are things which have been applied successfully to other houses or details which experience has shown to be desirable.

"These visionary plans always include the most modern features obtainable. The man who carries around visionary plans of a home he is going to build some day is quick to take up and incorporate in his plans new ideas and new equipment. I have witnessed the advent of the breakfast nook fancy, the built-in craze, the bungalow popularity and the demand for fireplaces and have seen these features come to be generally accepted and approved.

"Recently, however, I have had countless demands for a new device which seems to be sweeping its way to great popularity just as other meritorious household apparatus has done. This newest piece of equipment demanded by the 'dream home' builder is the water softener.

"People that build these homes know what they want. They want all the quality, comfort and luxury that their money will buy. Sometimes they must forego some item of luxury which their finances will not permit, but when they find something that gives them luxury with economy, watch them get it.

"That is the case with the zeolite type water softener which, in the long run, costs less than a cistern, provides soft water that is markedly superior to soft water from any other source and does that in spite of drought and what not. The water is much softer than cistern water,

infinitely cleaner and greatly to be desired for every household use from the laundry to the bath room."

While the application of the water softener from the viewpoint of the builder of homes is suggested by its economy and hygienic qualities, the household use of water so softened is conducive to greater satisfaction than the builder might dream of.

In every department of the home mechanically softened water is ideal. There is no use for water in the home where clean, clear, soft water is not to be preferred.



A Water Softener Occupies Only a Small Space in the Basement, but It Makes Available an Ample Supply of Clean, Soft Water at All Times and Costs Less Than a Cistern in the Long Run.

The home laundry is especially to be benefited by the use of real soft water. The amount of soap and washing supplies is greatly decreased by the use of real soft water, for there is no wastage in soap through curd which forms when soap and hard water meet. Soft water saves soap by producing abundant lather with great cleansing properties with a minimum of soap. Linens and all other fabrics which are made rough and discolored by the curd in hard water come forth soft, clean and snowy white when real soft water is used.

In the kitchen, soft water is ideal for cooking, dishwashing, cleaning and is greatly to be desired as drinking water. Hard water is used for cooking largely because it is cleaner than cistern water. The average housewife or cook knows that soft water, if it were clean, would be much better for cooking. The mechanical water softener answers that condition. Gone are the days of a "dash of baking soda" in the cooking water to soften it and make food cook more quickly.

Everyone knows how scale forms in a teakettle in which hard water is used. That scale is formed by the precipitation, by heat, of the hardening elements, chiefly lime and magnesia, in hard water.

FAIRBANKS-MORSE HOME WATER PLANTS

All Yours
for a few cents a day!



Prices
The complete unit with 10' hose, 1/2" pipe, and 1/2" valve... \$84.00
The complete unit with 10' hose, 1/2" pipe, and 1/2" valve... \$115.00

WATER under PRESSURE
means modern comforts in your home

WATER under pressure is one of the greatest modern factors of health and sanitation in the home. Even if you do not live along any water main, you can have plenty of water under pressure in bath, kitchen, laundry, lawn, watering trough, garage—anywhere. At very low cost you, too, can have this greater aid to health—this modern, scientific development that brings with it immeasurable comfort and removes the daily drudgery of carrying water.

The comfort and convenience of a water supply under pressure are well worth the slight cost. And think what it means to the health of the children to have plenty of fresh, flowing water always at your command. If you are engaged in farming, you know that a good supply of water is necessary in maintaining a healthy condition among your stock.

The operation of the electric unit illustrated is automatic—self-starting, self-closing, self-priming. Attached to any electric light circuit. There is a plant for drawing water from any source—city, spring, lake, river, shallow well or deep well. Whether you live on a farm, country estate, in town or at a summer resort, the plant is quickly and easily installed. If your town does not furnish city water, you will find this plant ideal for supplying rain water under pressure.

If electric current is not available we furnish a gasoline or kerosene power outfit which is equally successful.

See the authorized Fairbanks-Morse dealer in your community.

Send for free Water Service Library

The subject of water under pressure is fully covered in these interesting, valuable booklets. Following are a few of the chapter headings: "The Cheapest Service You Can Have"—"Health and Happiness in Your Home"—"Adding to Property Value"—"Increasing Farm Profits"—"Reducing Fire Risk"—"Protecting Baby's Health"—and many more. Fill in and mail the coupon.

FAIRBANKS, MORSE & CO.
Manufacturers Chicago, U.S.A.
Fairbanks-Morse Products "Every Line a Leader"

Fairbanks, Morse & Co., Dept. 800
420 S. Wabash Ave., Chicago, U.S.A.
Please send me your free Water Service Book. My source of water supply is: Lake, River, Spring, Shallow Well, Deep Well, Shallow Well, Cistern.

Name.....
Address.....
City.....
State.....

Advertising

that is reaching
over eleven million readers

The largest and most widely read publications in the United States are carrying the story of Fairbanks-Morse Home Water Plants to home owners who need this service. Backing up this campaign are leading farm papers, covering every state in the Union. Millions of people are seeing this advertising.

Thus, we are constantly creating additional interest in Fairbanks-Morse Home Water Plants. There is no let-up in the advertising. Continuously it hammers its message home—the message of greater comfort, health and happiness. It creates the desire for water under pressure. It produces inquiries from thousands of prospective home owners.

This advertising is making it easier for you to include water under pressure in the specifications. Home owners are being educated to the fact that any home—old or new—can have the great modern convenience of running water in bathroom, kitchen, laundry—ANY PLACE.

Include a Fairbanks-Morse Home Water Plant in your recommendations. It helps to make the house a more livable home.

Let us send you our latest literature, including Water Service Library—eight booklets which are of special interest to architects and builders.

Fairbanks, Morse & Co.

Branches and Service Stations covering every state in the Union

Manufacturers



Chicago, U. S. A.

Fairbanks-Morse Products—"Every Line a Leader"



National magazines and all the leading state farm papers are carrying the Fairbanks-Morse Home Water Plant advertising campaign.

FAIRBANKS, MORSE & CO., Dept. H-4,
900 S. Wabash Ave., Chicago, U. S. A.
Send complete details concerning Fairbanks-Morse Home Water Plants.

Name.....
Address.....
City.....
State.....

N A T I O N A L L Y A D V E R T I S E D

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

WHAT'S NEW?



EDITOR'S NOTE: *The AMERICAN BUILDER does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address AMERICAN BUILDER Information Exchange, 1827 Prairie Ave., Chicago.*

Overhead Heating

AN entirely new principle of warm air heating is embodied in an overhead system. This system is applicable to practically any type of building and does not require a basement for the installation of the furnace. The warm air is taken off at the top of the furnace through a single stack which leads directly to the attic of the building.

In the attic this stack connects with a distributing trunk system which delivers the heated air to the rooms directly below through registers placed in the ceiling. Heated air is delivered to rooms on the lower floor or floors directly from the main stack, through registers placed in the walls just below the ceiling.

By this method cellar pipes are eliminated and the large volume stack, direct to the attic, produces a high velocity which is said to insure a more active circulation and better distribution of the heat with less loss through radiation from the pipes. Considerable fuel economy is achieved because of this.

On account of the increased velocity due to the longer risers it has been found possible to run much longer horizontal pipes to registers where the overhead system is used. Because of this, it has been possible to warm distant rooms

by gravity—rooms which with the ordinary system of floor registers, necessitate the use of fans.

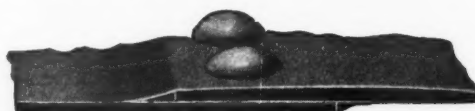
This ability to carry the warm air horizontally greater distances, allows the installation of the furnace at any part of the cellar that may be most convenient instead of making it necessary to take up the center of the cellar with the furnace.

By bringing heated air into the rooms from above does away with the soiling of ceilings and provides a natural circulation. Warm air always rises and when introduced through ceiling registers it does not have to pass through a layer of cold air first. As it cools it drops to the floor level where it is taken out of the room through vents at the baseboard. It is then conducted back to the furnace through a cold air duct. This system is covered by patents.



Galvanized Tanks

UNDERGROUND oil and gasoline tanks should be made trouble proof. In case of trouble with the burner, it is easily accessible but if the underground tank goes wrong you are up against it.



A Length Seam Which Is Lapped, Riveted and Hard Soldered Forms a Tight, Strong Joint Which Will not Crack.

Galvanized tanks need not be painted or tarred because the zinc spelter is impervious to moisture and the galvanized tank will outlive several ungalvanized ones. Nor are paint and tar a sure protection because every scratch exposes the metal to moisture which soon corrodes it.

Galvanized tanks are being made with the additional advantage of length seams which are lapped, closely riveted and hard soldered.

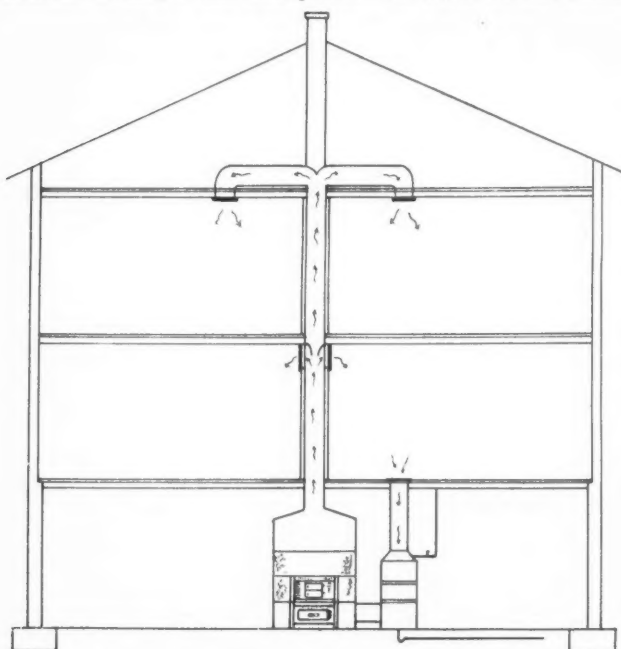


New Wire Rope for Building Industry

THE first basic change in wire rope for contracting and building purposes in more than a century is embodied in the Tru-lay rope now being manufactured.

The new principle developed in the making of the rope is the "performing" of wires and strands to the exact shape they must have to fit correctly in the completed product. The rope is being made in Lang and regular lays up to one inch in diameter and engineers concerned with its development for general industrial use express satisfaction with its performance under exacting and strenuous tests.

An important characteristic of this new rope is that it resists unstranding. It can be cut at any point for splicing and otherwise handled without the necessity of seizing. Exhaustive tests show that it has considerably longer life than ordinary rope under reversed bending stress—an



In the Overhead Heating System, the Warm Air Passes Through a Stack Directly to the Attic, Then Down Through the Rooms to Return to the Furnace.

Use the **BIG SIZE** Shingle for both fine and modest homes!



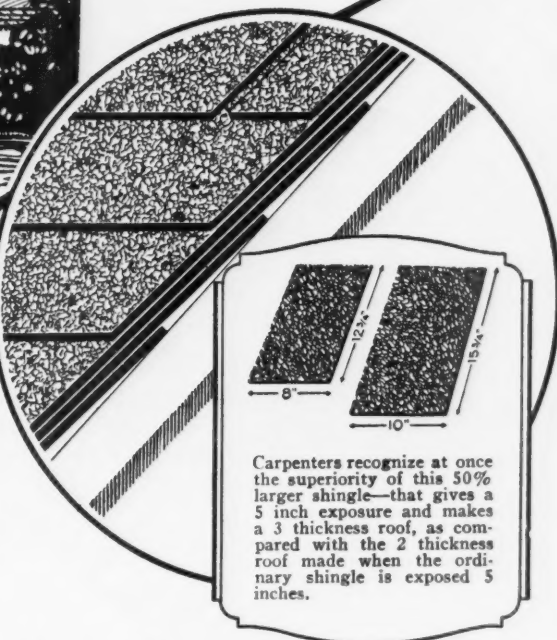
*The
Shingle
That Never
Curls*

USE it for fine homes because it offers every quality desired in a roof; protection, permanence, attractiveness. This is "the Shingle that Never Curls", the highest standard of shingle quality.

Then, too, the extra weight (it weighs approximately 300 pounds to the square) means a heavier, stronger, more durable roof. There is a deeper shadow line, of course, because of the additional thickness.

Use it for **modest** homes, because it means economy, the saving of time, of money, of nails. Naturally, a larger shingle is easier to apply, and covers the structure quicker. This is worth while considering in these days when good labor is scarce. And being 10 by 15 $\frac{3}{4}$ inches it allows a 5 inch exposure and still gives a three thickness roof.

A longer life of service, due to greater "bulk" of material and the non-curling quality—these



Carpenters recognize at once the superiority of this 50% larger shingle—that gives a 5 inch exposure and makes a 3 thickness roof, as compared with the 2 thickness roof made when the ordinary shingle is exposed 5 inches.

things mean a greater roof value which your customers will appreciate.

And there'll be a difference in your bank balance at the end of the year.

Your dealer can supply you, in the new and distinctive silver green, blue-black and red. Or, write us direct and we will give you complete information. You may find the coupon convenient in replying.

THE PHILIP CAREY COMPANY

510-530 Wayne Ave., Lockland, Cincinnati, Ohio

Carey
ASFALTSlate
SHINGLES
THE SHINGLE THAT NEVER CURLS

THE PHILIP CAREY COMPANY,
510-530 Wayne Ave., Lockland, Cincinnati, O.

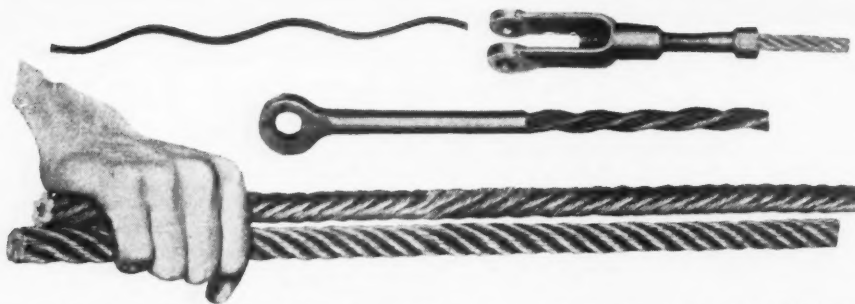
Gentlemen: Please send copy of "Before You Build" booklet and sample to

Name _____

Firm _____

Address _____

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Above to Right: Tru-Lay Rope with a Threaded Hexagon Tru-Loc Fitting, Permitting the Application of Shackle as Shown or Turnbuckles, Rods, etc.; Above, to Left: Strand of Tru-Lay Wire (Note How the Strand Is Performed to Hold the Exact Shape It must Take in the Completed Rope); Middle Photo: Flat Head Eye End Fitted Directly to Tru-Lay Rope; Lower Photo: Graphic Illustration of How Tru-Lay Rope Can Be Cut and Handled Without Seizing and Without Loss of Shape.

important asset where winding over sheaves and drums is a chief cause of wear.

The performing of the wires and strands in the rope results in evenly balancing the load on individual strands and in a remarkably uniform load distribution to single wires. The rope shows no tendency to high strand in actual use and has stood up satisfactorily in winding tests under heavy loads.

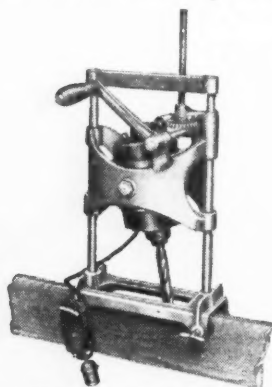
Broken wires in this new rope lie flat. Outer wires on cables, broken by long wear or abrasion, cause considerable trouble, and often necessitate the removal of the rope before it should be discarded. The outer wires of this new rope show no tendency to fray out of the rope body. They continue in their places, thus lessening the wear on other wires and on sheaves and drums. The fact that the rope does not unstrand makes splicing a comparatively simple operation, an important item from the contractor's viewpoint.

From the standpoint of safety as well as efficiency the new rope, because of its superior wearing qualities, is considered admirable for the general contracting and building industries. It is now being sold for use in steel hoisting and erecting, in material elevators, on steam shovels, pile drivers, and in other work where dependable cable is an important operating factor.

To make available practically the entire strength of the new rope, the company has developed for it a special steel fitting, without zinc. This new fitting has not only proved dependable under ordinary conditions, but also permits the use of turnbuckles, shackles and other equipment.

A steel sleeve is slipped over the smooth unseized end of the rope, placed in a specially designed press, and made to "flow" down upon the rope until it grips wires and strands. These sleeves may be of any reasonable length—can be threaded, can be equipped with heads of various types for wrenches, or furnished with eyes or hooks. The fitting is lighter, less

bulky and has been found to be more dependable than the old style zinc socket, probably because of the greater equalization of load on wires and strands.



This Little Machine Makes Possible Quick, Accurate Mortising for Door Locks, by Unskilled Workmen.

Electrical Power Mortiser

A PERFECT mortise for the door lock may be cut, in any kind of door, by an unskilled workman, in a few minutes' time, by the use of a new electrical power mortiser. This little tool is light but durable and can be operated from an

ordinary light socket. In situations where current is not available, it may also be operated by hand.

To operate, a door is lined in the center, the machine clamped on so that center marks are on the line, then the lock nuts are tightened, which keeps the machine in center for all doors of the same thickness. The eccentric adjustment for size of mortise is set and the current turned on. Turning the crank oscillates the bit and feeds it into the wood until the required depth is reached, as indicated by a scale on the top guide bar.

A contractor who tried out this tool reported that he showed a colored laborer how to operate it and the man then mortised eleven birch and three oak doors in fifty minutes, turning out smooth, perfect work.

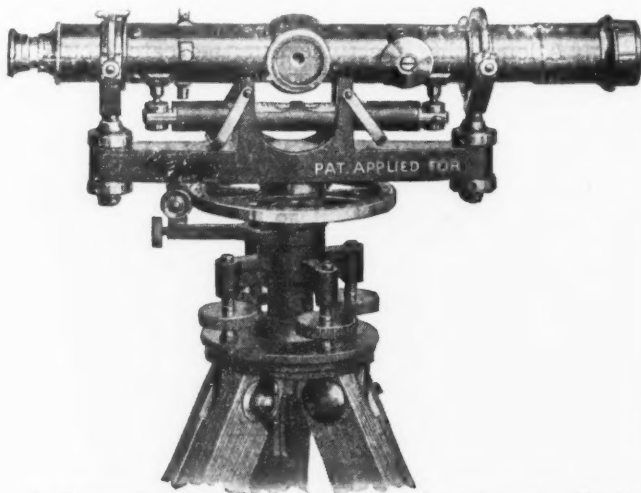


Convertible Level

A SUBSTANTIALLY built line of levels includes a farm or carpenters' level which is a simply constructed and inexpensive instrument for laying out ditches, draining, road leveling, laying out farm lands and similar purposes, a dumpy level, which is a more elaborate instrument for architects, millwrights, contractors and builders to use where vertical sighting is not required and a convertible level.

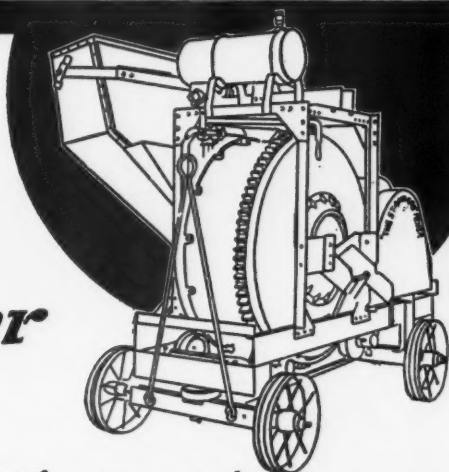
The convertible level is a highly rugged and versatile instrument for use in all types of construction work requiring either horizontal or vertical sighting. Its operation is simple so that good results can be obtained with it even by a layman. It consists of a 12-inch telescope with a 1¼-inch 25-diameter lense for sighting up to 600 feet, a spirit level, adjustable wyes with locking nuts for locking yokes.

The circle is of 4½-inch diameter, divided to degrees and numbered 0 to 90 in the quadrant and reading by vernier to five minutes. The leveling head is of improved design with clamping and tangent screws and four leveling screws with shoe. The crossbar and standards as well as the leveling head are of bell metal, insuring strength and durability. It is equipped with solid white ash tripod and a protection cap for the head, bolts have wing nuts for tightening by hand, a polished hard wood carrying case with strong lock and strap, six-ounce plumb-bob, trivet (for foundation work) sun shade and adjustable pins. Full instructions are supplied with each instrument.



A Convertible Level, Particularly Adapted to the Needs of the Contractor and Builder, Is Equally Serviceable for Laying Out Surface Work and for Vertical Sighting.

A Real Concrete Mixer



**A Regular
He-Man Mixer.
Not Merely A
Tumbling
Barrel**

Let Him Do His Own Talking

VERY LARGE CHARGING OPENING

Narrow drum allows maximum size opening which means a wider and steeper chute—greater charge per second.

This means the saving of time at the very start.

NARROW DRUM

is to the concrete mixer game as the coaster brake was to the bicycle—a revolutionary improvement. Drum being narrow, entire charge is dumped into one pile—not all over—permits the charge to be handled quicker. Allows drum to be discharged in less time.

This means more yards of concrete per day.

EXTREMELY LARGE DISCHARGE OPENING

This allows the discharge chute to have a greater pitch—greater speed in discharging the load. End of chute comes within a fraction of an inch on the side wall, takes all the contents of each bucket as it dumps—no waste or slop back into the bottom of mixer.

This means—a thorough and rapid discharge.

NO TIPPING—SOLID ON BASE

Due to design, the Standard Mixers are one of the most rigid and solid machines built. You never hear of a Standard upsetting. It is a perfectly balanced outfit and when properly placed is as hard to upset as a stubborn mule.

This means—less accidents.



PERFECT MIXING

If you were to mix by hand you would pull all your materials together in one heap. That is exactly what the narrow drum automatically accomplishes when being charged. Employing a series of specially designed steel buckets that gives the same exact action that our mothers used to employ in mixing bran, allows us to mix in less time than is possible by any method so far tested.

NON-OBSTRUCTING CHARGING SKIP

As we employ but one cable to raise the skip and as it is attached over half way back, there are no cables or bars to interfere with the charging of same.

This means—less spills and faster work.

EASY CONTROL

The elimination of numerous pulleys and cables and a central control means quicker action and a better control of the machine.

Interchangeability of Low Charger and Skip Loader

If you wish to change from one type of charging to another you can change without loss of time or money as they are interchangeable.

The Motor

Well, it's the best that can be had as our users will tell you after 15 years of actual experience.

THE STANDARD SCALE & SUPPLY CORPORATION

General Offices: 1631 Liberty Ave., Pittsburgh, Pa.

NEW YORK

PHILADELPHIA

CHICAGO

CLEVELAND

If it's more poured good concrete per day that you want—then it's

"THE

STANDARD

MIXER

*that you must use
Literature?*

Two New Stucco Products

TWO new oxy-chloride stucco products have recently been put on the market which are adapted to high grade, economical, flooring, stucco work, interior plastering and similar uses. Before being placed on a basis of commercial distribution these products were extensively used and tested in actually building work by the producer, who has been active in the industry for many years.



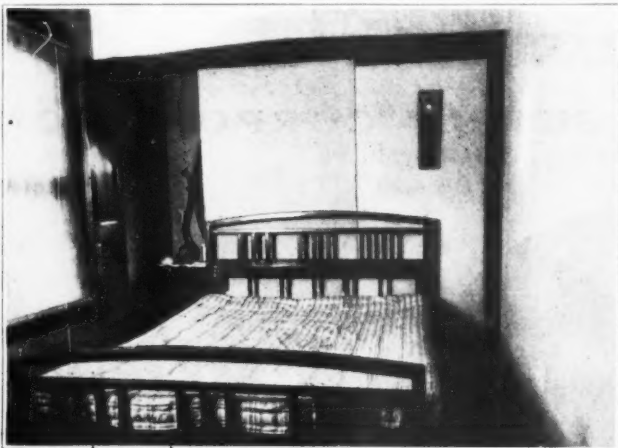
An Attractive Stucco Finish Was Achieved for This House by the Application of a New Stucco Which Is Now Being Produced on a Commercial Basis.

These products are thoroughly fireproof and low insurance rates prevail wherever they are used. In addition they lend themselves to all types of fine decorative work. An example of the beautiful exterior finish which is obtainable with the stucco is seen in the accompanying illustration, showing one of the houses in which the producer applied his newly developed products.



A New Disappearing Bed

A DISAPPEARING bed has recently been placed on the market which incorporates several interesting and valuable features. This bed can be hung on an ordinary stock, 30-inch door. This is accomplished by pivoting the door at its center and hanging the bed on it on rollers which operate on a track. The result is that the bed can be swung back into the recess in a 24-inch radius even when



An Ordinary 30 Inch Door Can Be Used for Hanging This New Disappearing Bed and the Second Door Can Be Used Even When the Bed Is Open for Use.

a bed with box springs is used. Where an ordinary mattress is used this radius can be reduced to as little as 16 inches.

Another feature of this method of hanging is that the second door can be utilized as an

entrance to the recess after the bed has been opened for the night, because the bed can be pushed to the side on the track. This makes it possible to use the recess as a dressing room without providing another door. The small swinging radius also affords increased space in the dressing room and, when the bed is closed, it occupies a minimum space in the dressing room.

When a bed with panel head is used it gives exactly the appearance of an ordinary separate bed because the doors of the recess are all closed and no mechanism is visible.



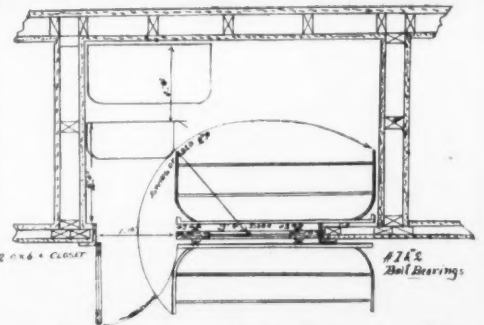
Portable Saw Rig

THE portable saw rig illustrated here is especially designed for builders and contractors. At an operating cost of 25 cents per day this power saw will do all cross-cut, rip and miter work, will frame everything from the rafters to the finished moulding, and will speed the building work in a manner more than satisfactory.

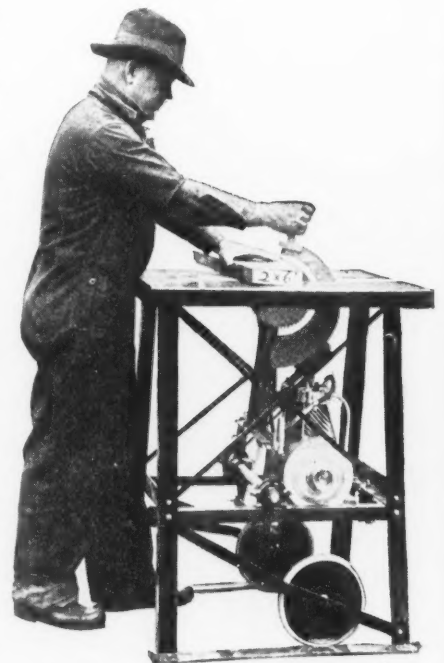
Ease of operation is emphasized by a new feature in cut-off work, the saw is run through the lumber, which remains stationary. Instead of pushing the heavy lumber, you merely pull the easily moving saw through it, which not only saves work but prevents cramping the board, as frequently happens when feeding the lumber into the saw. A special guard protects the blade while in operation.

The saw has a capacity of 1x15 to 2x12 inches. The 8-inch blade is an all-purpose type for both rip and cross-cut sawing. Power is supplied by a 3/4-horsepower gasoline motor, located in the frame and started by a single downward stroke of a foot lever. As the motor requires no electric connection it can be used anywhere.

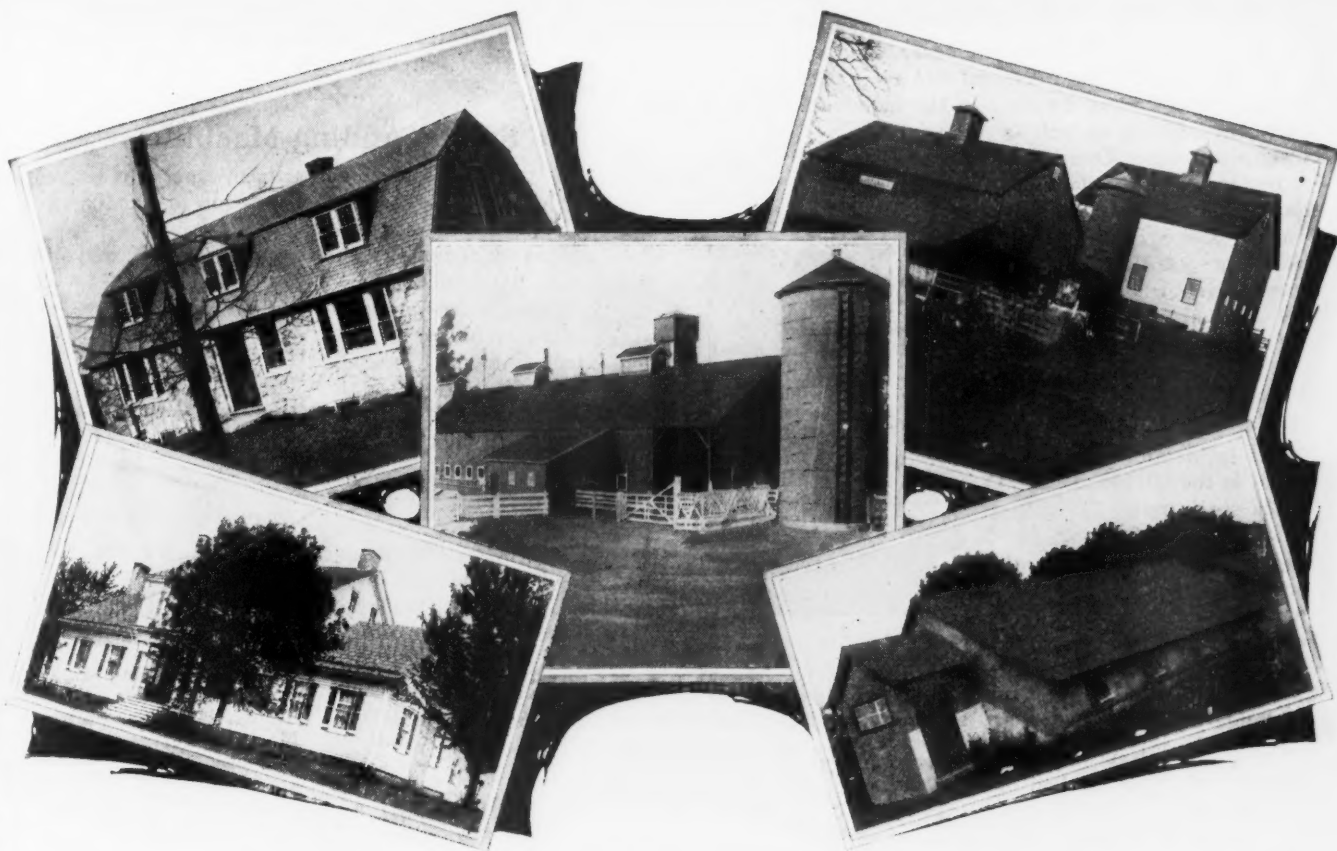
The outfit is equipped with a portable dolly having rubber tired wheels. A release lever lowers the table and allows it to stand solidly on the floor while in use.



This Diagram Shows How the New Bed Can Be Swung in a 24-Inch Radius Even When Equipped with Box Springs.



A Portable Saw Rig Which Is Adapted to All Kinds of Building Work from Rafters to Finish Moulding.



They Point With Pride

ABUILDER is known by the work he does. Give Ruberoid a chance and it will speak eloquently in your behalf.

There are thousands of builders who point with pride to roofs of Ruberoid Roll-roofing which they laid a score of years ago and which are still in tip-top condition. Such roofs are monuments to the judgment and integrity of these men.

A few of these roofs are described on this page. They testify to the durability of Ruberoid Roll-roofing—durability derived from the Ruberoid standard of quality which was established over a generation ago and which has been steadfastly maintained.

In the extensive Ruberoid line you will find roofings or shingles which will meet your requirements as to appearance, quality and price.

Near you is a lumber or building supply dealer who sells Ruberoid Products. If you don't know him, use the coupon.

The RUBEROID Co.

Chicago

New York

Boston

RU-BER-OID

SHINGLES AND ROOFING



There is but one Ruberoid.
Look for the Man on the Label.

The RUBEROID Co., DEPT. 1
95 Madison Ave., New York City

Gentlemen: Kindly send me literature describing Ruberoid Roll-roofing and other Ruberoid Products.

Name.....

Address.....

17 Years

This is a fair sample of the Ruberoid roof just removed from a barn we tore down. This roof has been on seventeen years, only painted once, and was laid over old wooden shingles at that.

L. E. Crawford, Binghamton, N. Y.

21 Years

The Ruberoid Roofing I applied on one of my poultry houses in the year 1904, although never painted, appears to be good for many years to come. I contemplate using considerable roofing in the Fall, and Ruberoid will be my choice.

J. W. Thornburg, Inglesfield, Ind.

22 Years

In 1903 we applied Ruberoid on our pigeon house. Recently, we dismantled this building and found the Ruberoid in such excellent condition that we used it over again. If the cost is established by years of service, it is by far the cheapest roofing we know of.

Ralph Walsh, Vineland, N. J.

23 Years

Twenty-three years ago last May I roofed several of my hen houses with Ruberoid. There have never been any repairs or leaks, and the roofs look good for many more years of service. On the new buildings that I am erecting, I am using Ruberoid Giant-shingles and Ruberoid Mineralized, Extra Heavy.

F. E. Harris, South Nashua, N. H.

*30 Years

In the spring of 1893 I put a Ruberoid roof on an addition to my farm home. The roof was never repaired, painted or looked after in any way and up to the time I sold the farm three years ago had never leaked. Had this roof the attention usually given to roofs, I am sure it would last indefinitely.

F. J. Whitlock, Belle Plaine, Minn.

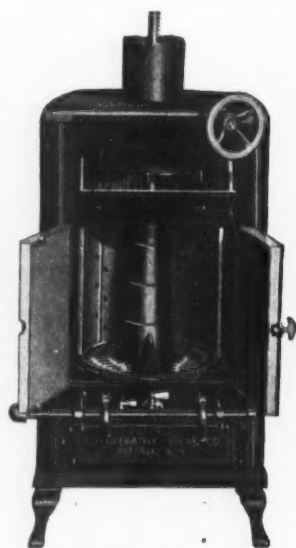
*In 1923 The RUBEROID Co. replaced this roof gratis in order to obtain the 30-year roofing for sample purposes.

Odorless Incinerator

INCINERATION is the most modern, sanitary and scientific method of refuse disposal and the garbage incinerator is rapidly finding its place in the individual home and apartment building as well as large institutions. One incinerator for home installation is constructed along an entirely new line and is claimed to be absolutely odorless at all times. Even when the stove pipe at the top is removed and the nose placed directly over the flue, during burning, no garbage odor can be detected.

This incinerator can be installed in the kitchen, occupying a space only 24 inches square, or can be built into the wall. It is connected with the gas supply by a $\frac{3}{4}$ -inch connection and burns either artificial or natural gas. The 6-inch flue is connected either directly to the chimney or to the range pipe.

The principal novelty in construction is the method of burning, from the top down. The weight of a baffle plate forces the garbage down, the support telescoping into itself. When the bottom is reached a valve automatically shuts off the gas, so that after starting the incinerator it requires no attention except leveling the garbage once or twice by means of a push wheel. Refuse can be kept indefinitely, in the incinerator, and burned weekly or whenever it is filled.

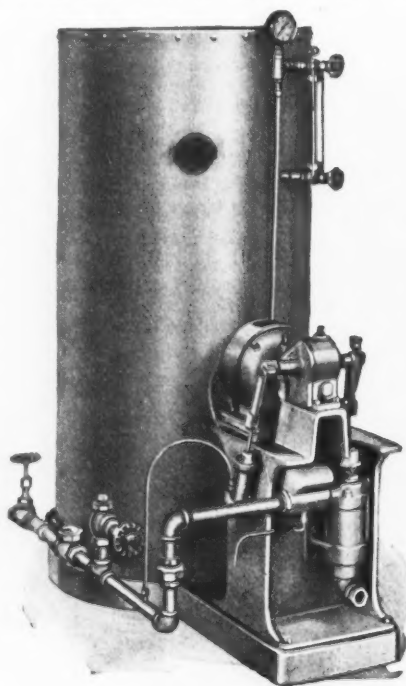


A Baffle Plate with Telescoping Support Forces the Refuses Down and Automatically Shuts Off the Gas.

Automatic Pressure Water System

AN automatic water system can be obtained completely set up and requiring only two pipe connections for installation. With this system the country home is assured of an ample supply of fresh, running water at all times, the system requiring no further attention after it has been installed.

The complete unit consists of a special galvanized, rust-proof tank and a single brass cylinder, self-priming pump driven by a direct geared electric motor, which operates without noise. There are no belts or complicated parts. Units



For the Country Home, This Automatic Water System Assures an Ample Supply of Fresh Water at All Times.

are of three sizes, to provide for different capacity requirements and are adapted to supplying water from any source not more than 20 feet below the level at which they are installed.



Small Sanding Machine

THIS little sanding machine has been especially designed for those who have a small amount of sanding and polishing to do and appreciate the saving of time which is possible with such equipment. With this machine one person can do more work than four men could do by hand, yet the original cost is small and very little power is used.

It is equipped with a 6-inch sanding drum which can be removed in ten minutes and replaced with a polishing brush, making it a combination sanding and polishing machine. It is operated by a $\frac{1}{4}$ horsepower electric motor through a silent chain drive and ball bearings. It is easily operated and can be used with entire safety by a woman.



A Small Sanding Machine Which Can Be Quietly Changed Into a Polishing Machine Serves a Double Purpose.



All Metal Medicine Case

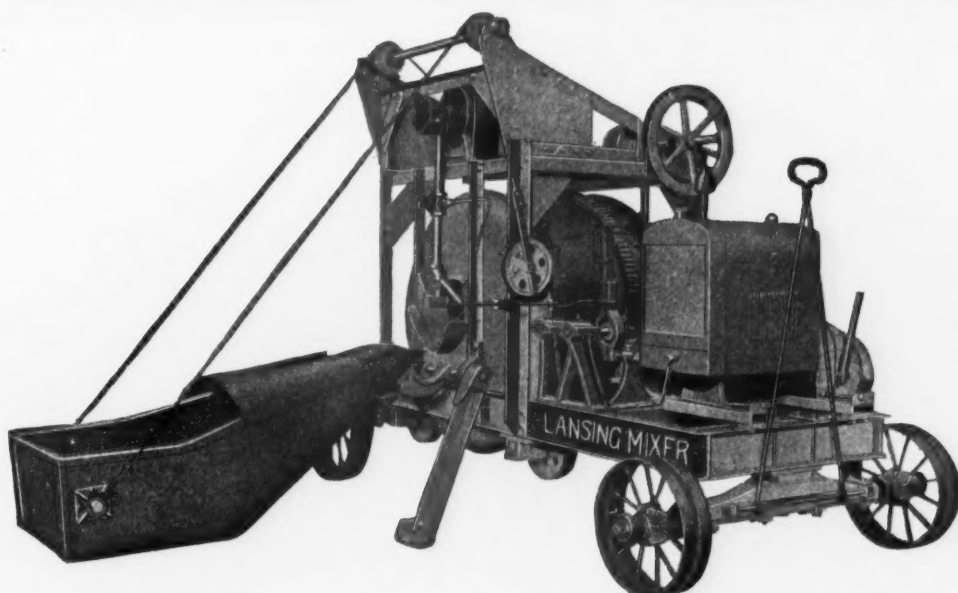
THIS cabinet is made entirely of metal, the body being formed from one piece of cast iron. There are no cracks or seams to collect dirt and, all corners and edges being covered, it is easy to clean. The removable shelves are also of metal and the shelf supports are formed in the body of the cabinet. The door is one piece and free from bolts.

The finish is white vitrified porcelain enamel fused onto the metal and will not chip, rust, burn or discolor. The case is made in one size only, to fit a wall opening of 18 by 24 inches and is $3\frac{1}{2}$ inches deep. A 16 by 16-inch plate glass mirror is set into the door and can be replaced by simply removing the door knob.

This case is supplied in two styles, one being an all white finish and the other white with black porcelain corners. It is also furnished either with or without a combination fixture which contains a tumbler holder, soap dish and tooth brush holder. This fixture is made of the same material and is secured to the lower flange of the case, from the back, before the case is mounted in the wall.

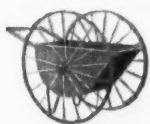


Beauty and Cleanliness Are Characteristic of This Medicine Cabinet, Which Is Formed from a Piece of Metal and Finished in Vitrified Porcelain Enamel.



YOU CAN EXPECT LOWER OPERATING COST

From the new underslung, vibrationless Lansing 14-S concrete mixer



"Lansing Equipment
for Contractors"

Mixers

Batch

Continuous

Mortar

Barrows

Carts

Scrapers

Hoists

Block

Machines

CONTAINS
COMPLETE
INFORMATION

Send for
Your
Copy

Lansing Equipment
for
Contractors

IT IS designed for maintaining big output without interruption.

Parts are amply oversize insuring long life and low upkeep, yet weight, compactness and ease of handling and moving have been given due consideration.

Special attention has been given all detail such as simplicity of parts replacement and smoothness of operation.

Vibration, the greatest enemy to operating economy, has been reduced to a minimum.

POWER: equipped with a four-cylinder Le Roi gasoline engine.

FRAME: heavy hot riveted well brace channel iron, mounted on a rigid axle construction.

ROLLERS: underslung, mounted underside of frame giving the machine a low center of gravity.

DRUM: runs smoothly, entirely free from binding or unnatural wear. The thorough mixing and discharging action is surprisingly rapid. Capacity 14 cu. ft. wet concrete per batch.

SKIP: quickly elevates to 50 degree angle emptying load without slopping.

HOISTING CLUTCH: double internal expanding type Raybestos lined. Automatically releases when skip reaches discharging position. Brake then holds skip until released.

OPERATING LEVERS are grouped on loading side within easy control of operator. Discharge chute operated from either side.

WATER TANK 30 gallon automatic.

Complete specifications at your dealer or send for booklet, "Lansing Equipment for Contractors."

*The Sun never sets on Lansing Products
Distribution all over the World*

LANSING - COMPANY, LANSING, MICHIGAN

BRANCH WAREHOUSES

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LANSING
EQUIPMENT FOR CONTRACTORS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Save Time and Money

Builders and Contractors, everywhere, agree that the **DIETZGEN CONVERTIBLE LEVEL** gives them what they have always needed—an absolute accurate, sturdy, thoroughly dependable instrument that will function equally as well as a **LEVEL** or **TRANSIT**.

In performing this double-service it pays for itself in time saved and as a means to bigger and more profitable jobs.

Confidence in its value as a business necessity is so well shown by its wide use:

- in leveling foundations, buildings, bridges, walls, abutments, piers, etc.;
- in grading roads, streets, sewers, irrigating ditches, side walks, etc.;
- in running straight lines for streets, sewers, ditches, fences, curbing, etc.;
- in lining up buildings, chimneys, walls, poles, towers, shafting, etc.;
- in surveying fields, lots, estates, parks, etc.;
- in hundreds of other cases where leveling, setting off angles, plumbing-up, or running straight lines are encountered.

It is simple and practical—anyone can operate it—always ready—remains adjusted.

To change from a transit to a level simply lift the axis out of the wyes and insert the telescope in its place.

And, too, it is reasonably priced and is made by a concern whose reputation for building precision instruments is known everywhere.

Send for information and catalog.

EUGENE DIETZGEN CO.

Chicago New York
New Orleans Pittsburgh
San Francisco

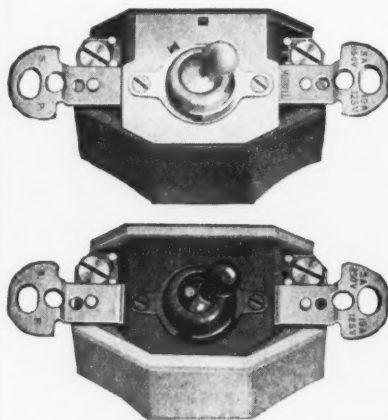


Philadelphia Washington
Milwaukee Los Angeles
Factory at Chicago

Drawing, Surveying, Mathematical Instruments & Materials, Measuring Tapes

A New Toggle Switch

A NEW and improved toggle switch has been brought out which features a lock and release movement. It is equipped with a drum spring which is wound up by the action of the toggle handle. When the spring has reached its full strength it is released by what is known as a lock release movement.



These Lock Release Toggle Switches Are Made in White Porcelain and Black Composition.

This movement takes advantage of the full strength of the spring and therefore will break a greater load, in a smaller space, than any other form of toggle switch action, it is claimed. So far as known, this is the first application of a lock release to a toggle switch.

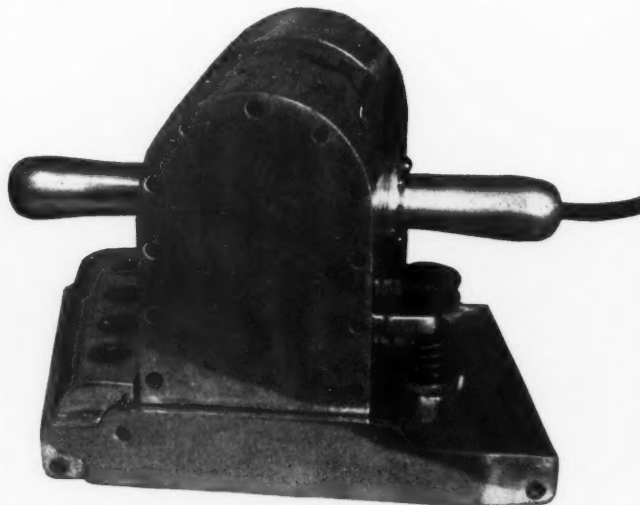
These switches are made in white porcelain with toggle handles of black Bakelite and in black composition with toggle handles of brass. Both types are supplied in single pole, double poles, three-way and four-way.



Portable Electric Sander

A NEW portable, electric sander, designed to do hand work at machine speed, can be used on any flat surface. The gears and ball-bearings are totally enclosed, running in oil in dustproof compartments and the one-third horsepower motor is in a dustproof compartment. The motor drives a drum, around which the sand or emery paper is clamped, at 4,000 revolutions per minute. All parts are enclosed in the upper housing.

Rollers, in the base, guide the sand drum at the proper angle for fast and smooth cutting and at this angle each cut laps the last one perfectly. Between the base and upper power plant there is an accurate screw adjustment for depth of cut as well as spring to relieve the pressure of the drum on the work when finishing, sanding or grinding. A coil spring raises the drum from the surface when stopping, leaving no marks.



Here Is a Highly Portable Electric Sander Designed to Do Hand Work at Machine Speed, on Any Flat Surface.



*Commodore Building Hotel
Cleveland, Ohio
S. H. White, Architect
W. S. Ferguson, Engineer
Truscon Steel Joists throughout*

Out of Sight and Out of Mind

The structural quality of Truscon Steel Joists is such that when they are out of sight in the fabric of the building they can safely be out of mind also. Reliability, fireproofness and quiet are gained. Truscon Steel Joists are the highest type construction for light occupancy buildings.

The light weight of Truscon Steel Joists allows economy through corresponding light weight throughout the structure. The basic cost economy is great and qualities that attract and retain tenants are part of Truscon Steel Joist superiority. It is the lowest cost permanent, fireproof construction.

Consult Truscon Before Building

Truscon maintains a corps of experienced engineers who will gladly cooperate with you on any building problem. This advisory service is free and without the slightest obligation to you.

Write for full information on Truscon Steel Joists

TRUSCON STEEL COMPANY, YOUNGSTOWN, OHIO

*Warehouses and Sales Offices in Principal Cities
Canada: Walkerville, Ont. Foreign Div.: New York*

TRUSCON

TRUSCON
STEEL CO.

STEEL JOISTS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

KNOW that Your Bid Is Low

Reduce Your Costs with the Superior Woodworker

This is an age of machinery and machine production—yet most of your competitors doubtless are still working with hand tools. With a Superior Woodworker you can eliminate hours, on many jobs, days of hand labor and enjoy the advantage of lower costs.

Even more important is the speeding up of your work. Less time is required for a each job. You can handle more jobs. A Superior Woodworker is the most all around useful, money saving, money making investment you can make.



The New Superior Woodworker

It is built to handle all woodworking operations on the job or in the shop.

Cross Cutting
Ripping
Dadoing

Mortising
Jointing
Mitering

Tenoning
Boring
Sanding

It is easily transported from job to job. Can be used on any job anywhere, for it is gasoline engine driven.

The Superior Woodworker is the product of an old well established manufacturer of woodworking machines. It is built to the same rugged specifications for which all Superior machines are noted. It was designed for standardized volume production. As a result—

The Low Cost Will Surprise You

For the cost of the Superior Woodworker is LOW when compared with machines intended for the same character of work.

The saving on one ordinary job will pay for the new Superior Woodworker.

Jones Superior Machine., 1260 W. North Ave., Chicago

MAIL AT ONCE!

Please send me full details regarding the Superior Woodworker.

Name

Address

City..... State.....

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to readers of the American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

"The Jamesway Magazine," published periodically by Jamesway, Fort Atkinson, Wis., in the interest of better dairy, hog and poultry farming, contains much interesting and valuable information on the housing of farm animals.

"Library Buildings," a book recently published by the American Library Association, was listed in the January issue, page 206. By mistake the price of this book was omitted. It is supplied by the association at \$3.50.

"Alpha Cement—How to Use It," is the new, revised, 112-page handbook of the Alpha Portland Cement Company, Easton, Pa. This is a most complete and elaborately illustrated reference book on the use of portland cement in every type of construction work and should be very valuable to anyone interested in the use of concrete, stucco or mortar.

"Elimination of Waste" is a new bulletin issued by the Bureau of Standards of the Department of Commerce. It is supplied by the government upon request, for 10 cents. It contains a summary of activities of the Division of Simplified Practice and a description of the services offered to American industries.

The Crescent Machine Company, of Leetonia, Ohio, describes its line of New Model Crescent Universal Woodworkers Nos. 101 to 112 in a 23-page booklet. This is fully illustrated and contains a complete description of each machine with specifications.

The Goulds Manufacturing Company, Seneca Falls, N. Y., recently completed an investigation, in collaboration with the Union Oil Company of California, a report of which it has published under the title, "Investigation of the Performance of Centrifugal Pumps When Pumping Oils." The results of the tests are graphically illustrated by means of charts.

"Pine Homes," a booklet published by the California White and Sugar Pine Manufacturers' Association, 690 Call Building, San Francisco, Cal., reproduces in full a report made by Frederick A. Williams, architect, on the use of California white pine in all phases of home building, and also contains a tabulation of sizes and grades of California white pine lumber.

"Triangle News" is the name of the new house organ of Richardson & Boyton Company, 260 Fifth Avenue, New York City, the January, 1925, issue being No. 1, Vol. 1. It will be published regularly in the interest of the heating and cooking equipment industry.

The General Electric Company, Bridgeport, Conn., has published a most interesting book under the title, "The Home of a Hundred Comforts." This book contains a complete description of ideal electric wiring for a home, with drawings specifying all fixtures and their layout. It is illustrated throughout and bound in heavy paper.

"New Facts About Oil Heating" tells the story of the Oil-O-Matic burner, by which the Williams Oil-O-Matic Heating Company, Bloomington, Ill., has made fuel oil available for the heating of homes and other buildings. It is attractively printed in colors on rough paper and bound in cardboard.

"Van Guilder System" is an attractively illustrated booklet of the Van Guilder System Concrete Building, Inc., 15 E. 40th Street, New York City, which gives a graphic description of this method of constructing double monolithic concrete walls by use of machines which make unnecessary the customary wood or metal forms and without the necessity of furring or lathing.

For Speed, Safety, Lower Costs

Use *Trouble Saver* Steel Scaffolding

We daily receive letters from users all over the country, telling us of their complete satisfaction with their *Trouble Saver* equipment.

In scaffolding a house, two men with *Trouble Savers* can beat a gang of ten men working with lumber. And in taking down *Trouble Savers* there is the same speed, with the big added advantage that there are no nails to pull and no second-hand or waste lumber.

In use, *Trouble Savers* are absolutely rigid and many times stronger than wood. Your men feel perfectly at ease on *Trouble Savers* with the result that they do faster and better work.

Trouble Savers are also collapsible and can be folded, which means time and money saved in moving from one job to another and in storing.

All of these factors help to reduce your overhead and add that much more to your profits column.

Here is just what a few of our thousands of users say:

"Rightly named"—"Best ever"—"Safest scaffold made"—"Paid for themselves on first job"—"Quick and handy"—"Our men feel safe on *Trouble Savers*"—"The finest thing for quick work and safety."

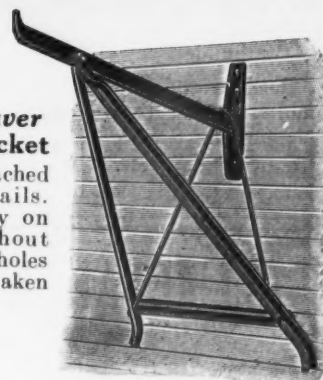
Send in your order today, or send for further information. It may mean the difference between a good profit or a loss on your next job.

The Steel Scaffolding Co.
Evansville, Indiana



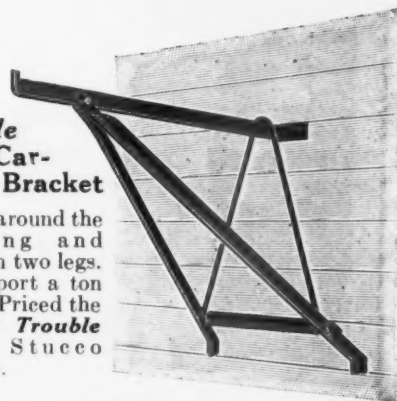
Trouble Saver Stucco Bracket

Quickly attached with four nails. Stands solidly on two legs without wobbling. No holes to patch when taken down.

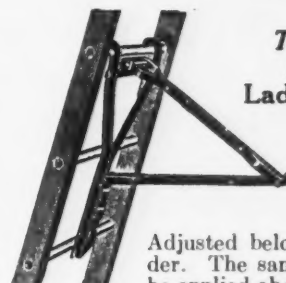


Trouble Saver Car- penter Bracket

Hooks around the studding and stands on two legs. Will support a ton weight. Priced the same as *Trouble Saver* Stucco Brackets.



Trouble Saver Ladder Jack



Adjusted below the ladder. The same jack can be applied above the ladder. Note that the weight is taken on three rungs.



Trouble Saver Adjustable Steel Trestles

Come in six different sizes that give a range in height from 16 inches to 10 feet. A strong solid trestle that is easily and quickly erected and adjusted. Write for detailed information and prices.

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to readers of the American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

"Linoleum Logic," a monthly publication of the Linoleum Division of the Armstrong Cork Company, Lancaster, Pa., which starts on its second year with the issue of January, 1925, is devoted to better merchandising of linoleum floor coverings.

"Blystone," the new catalog of the Blystone Manufacturing Company, Cambridge Springs, Pa., contains complete descriptions, illustrations and drawings of the Blystone line of mixers for concrete, plaster and mortar, automatic moulding machines for making blocks and tile, and skip loaders and conveyors.

"The Concrete House Magazine," published bi-monthly by the Portland Cement Association, 111 W. Washington Street, Chicago, Ill., contains, in the January-February issue, an interesting article on the adaptation of solid slab concrete floors to residence construction. This includes data on the necessary thicknesses and reinforcement for different areas.

"The Binder in Your Wall" is a pamphlet, published by the National Lime Stone Association, which offers information on the use of lime mortar for various purposes with a number of tabulations pertaining to the subject and useful to the builder.

"Design and Control of Concrete Mixtures," the latest publication of the Portland Cement Association, 11 W. Washington Street, Chicago, Ill., deals with the method of producing concrete of predetermined strength. It includes tests and calculations for designing mixtures, standard tests

and calculations for designing mixtures, standard methods of determining the suitability of aggregates, and typical examples of methods of design.

The Annual Proceedings for 1924 of the Society for Testing Materials, 1315 Spruce Street, Philadelphia, Pa., has been issued in two parts. Each part is available at \$6.00 in paper, \$6.50 in cloth and \$8.00 in half leather binding.

Copper & Brass Research Association Bulletin is published monthly at 25 Broadway, New York City, and contains a great variety of interesting information on the use of these metals in the building industry.

"The Good Mixer," published by The Jaeger Machine Co., Columbus, Ohio, contains, in the March issue, a report of the 13th annual convention of Jaeger distributors as well as useful information about the company's products.

The Bridgeport Brass Company, Bridgeport, Conn., has issued Data Book No. 16 in convenient pocket size which contains tabulated prices and weights of its sheet brass, rod, wire, condensor tubes and seamless brass and copper tubes.

"Fairfacts Fixtures" is the new catalog of the Fairfacts Company, 234-6 W. Fourteenth Street, New York City. It is prepared in a form to fit into the filing system by the Scientific Research Department of the American Institute of Architects and is accompanied by cross index cards. This catalog contains complete descriptions of the company's bath room fixtures and gives methods of installation. It is well illustrated in colors.

"Through the Ages" is the monthly publication of the National Association of Marble Dealers, subscription price, three dollars a year. The February issue contains an interesting article on "Marble as an Interior Finish" as well as a list of the world's marbles and a list of quarries and manufacturers.

ALLMETAL WEATHERSTRIP



MEANS REAL PROFITS

to progressive weatherstrip contractors. There is still some choice territory open.

Every building needs weatherstrip, especially thru the rainy season of the year.

SELL ALLMETAL WEATHERSTRIP
and have a good paying business of your own.

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ALLMETAL WEATHERSTRIP CO.
231 W. Illinois St., Chicago, Ill.

Gentlemen:—Without obligation, please send me samples and literature.

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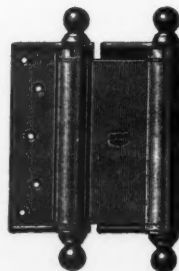
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**BUY
THE BEST
HARDWARE
FOR
HARD-WEAR**



**UTILITY
DURABILITY
BEAUTY
IN THE
BOMMER**

BOMMER SPRING HINGES ARE THE BEST

**Your DEALER handles them,
Get New Catalog 47, you need it.**

**BOMMER SPRING HINGE COMPANY
MANUFACTURERS BROOKLYN, N. Y.**

THIS SAW RIG SAVES BUILDERS TIME, TROUBLE, WORK AND WAGES

\$25⁰⁰
**BRINGS IT
TO YOU**

The Days of Hand Sawing for Progressive Contractors are Over

Why pay out of the profits that should jingle in YOUR OWN pocket, wages to unnecessary help—waste time that means money—expend your vitality, energy, strength, in back-breaking hand sawing, which, when equipped with this simple, inexpensive Portable Saw Rig, you eliminate, and accomplish in ONE hour what formerly took you TEN? Facts are facts. Old methods are costing you TOO much. Why continue in the old rut—with the old tool box on your back, when for 25 cents a day you can increase your prestige and income five-fold?

**FREE
TRIAL**

The "JIFFY" SAW

Builder's Complete

The "Jiffy" is the simplest, most economical, most efficient, of any Saw Rig regardless of capacity. Rigid all-steel table, size 24x32 in., and frame; compact, simple, air-cooled power unit; mounted on rubber tired wheels that make it easily moved to the desired place on the job.

Take It Anywhere You Saw

You take it anywhere—up to the second floor or down in the basement. Just step on the lever and it is raised onto its rubber tired wheels and moved to any convenient place with ease and facility; weighs only 225 lbs. This feature alone makes it adaptable to the job at hand.

Cross-Cuts, Rips, Miters

You will find the "Jiffy" a "bear" for work. Comes fitted with an 8-in. all-purpose saw that cross-cuts, rips, miters with equal facility and efficiency. Takes any material up to 1x15 and 2x12 in., which is ample capacity for most any size job. With this saw you can work up 8,000 to 10,000 feet of lumber a day or 500 cuts an hour on rafters, joists and similar work.



Portable Gas Engine Saw Rig

Its distinguishing feature is the saw, which operates on the swing method—moving THROUGH the lumber instead of the lumber through the saw. Quicker, easier; no jamming of the blade. Starts easily. Runs smoothly; 10 hours on 1 gallon of gasoline.

For Big or Little Jobs

No job is too big or too small for the "Jiffy." You will use it all day for cutting rafters, joists, sheeting, siding, flooring, or whatnot. You will find much work it can do faster and better.

Powerful Motor

Gasoline Motor — $\frac{3}{4}$ horse power, single cylinder, 4 cycle.

Ignition — Built-in fly wheel magneto. Moisture proof.

Carburetor — Set jet type. Extremely simple.

Cooling — Air current.

Starting — Lever style. "Step on it" and it's off.

Fuel Capacity — 1 gallon.

The "Jiffy" Saw Will Work For You For 25¢ a Day

Doesn't it fairly make your arm ache and your poor back wince, when the day is done, to look at that little pile of saw dust under your trestles and what it represents—10 hours of back-breaking labor. Just think! For only 25 cents a day—the price of a gallon of gasoline and a little oil—you can save 85% of the hand-saw labor on an ordinary job, save 12% of the total cost to the owner, and do TEN TIMES as much work, and still be unfatigued when the day is spent. And the only accountable reason for continuing hand sawing is the long established practice, nothing more. What you formerly did by "elbow grease" can now be done economically by gasoline. You derive the difference. Think it over.

Investigate! This Means Much to You

So confident are we that you will find the "Jiffy" indispensable that we offer to send it to you on 10 Days Free Trial. If then you are dissatisfied you may return it and get your initial payment back. You take no risk. Sign and mail the coupon for our free booklet "Sawing With Elbow Grease or Gasoline." It gives facts and figures that will open your eyes to the savings and increased profit that comes from modern equipment. This is your opportunity to take a big step forward in your profession—to advance yourself in your own estimation and in the opinion of the building world. Don't pass it up. It means much to you.

621 Olive St. **A. S. Aloe Co.** St. Louis

FREE

SAWING
WITH
ELBOW GREASE
OR
GASOLINE
?

MAIL COUPON NOW!

A. S. ALOE, 621 OLIVE ST., ST. LOUIS, MO.

Without obligation, send me your FREE book, "Sawing With Elbow Grease or Gasoline." Also full particulars about the "Jiffy" Portable Saw Rig and details of your easy payment plan.

Name.....

Address.....

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to readers of the American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

The Southern Retail Lumber Dealers' Association's twenty-eighth annual year book contains a list of dealers, the program of the 1925 convention and a summary of standardized basic grade classifications for yard lumber.

The Society for Electrical Development, Inc., 522 Fifth Ave., New York City, has just issued a report of the progress of the Red Seal Plan for popularizing adequate wiring installations. This report indicates a rapidly growing indorsement by the industry throughout the country.

Armstrong Cork and Insulation Company, Pittsburgh, Pa., has prepared an attractive and informative booklet on "Insulation of Dwellings with Armstrong's Corkboard" which contains data on the effectiveness of this insulation and specifications for its application.

"Historic Homes of America" is an artistic booklet gotten out by the Red Cedar Shingle Bureau, illustrating a number of historic houses, many dating back to pre-Revolutionary days, in which shingled walls were used. It offers interesting suggestions for Colonial design and treatment.

"Asbestos," for February, published monthly by Secretarial Service, 246 N. 17th Street, Philadelphia, Pa., at \$1.00 a year, contains an interesting article about Zonolite, a new mineral product of value for insulation, fireproofing and decoration.

Ralph M. Kennedy, 111 N. Seventh Street, Philadelphia, Pa., has issued a price list covering the completed line of Kennedy utility saw outfits and accessories.

Leonard-Rooke Company, Providence, R. I., has issued a 1925 catalog and price list which contains complete descrip-

tions and illustrations of the numerous applications of the Leonard valves for water temperature control.

The New Jersey Zinc Company, 160 Front Street, New York City, has issued a most interesting book of specifications for distribution to architects, builders, contractors, and sheet metal workers only. It will be sent only when requested on the business letterhead. It contains complete specifications for zinc leaders, gutters and eaves-troughs, and is designed for filing under the A. I. A. Classification.

The Associated Tile Manufacturers, Beaver Falls, Pa., have issued specifications for tile work for a Dutch Colonial bath room and a Venetian breakfast room, with illustrations in color of both designs.

The U. S. Standard Manufacturing Co., Columbiana, Ohio, has a new complete catalog displaying its line of cement block machinery and giving instruction for making blocks with these machines.

Save the Surface Campaign, The Bourse, Philadelphia, Pa., has prepared an extensive advertising campaign to be furnished to groups of paint dealers and contractors for co-operative use in local papers in presenting the installment plan for painting.

American Oil Heating Corp., West Townsend, Mass., offers a new catalog descriptive of its oil burner, home heating plants.

"From Forest to Floor" is the new catalog of the Indiana Flooring Company, 234 Rider Avenue, New York City. It is prepared in folder form to fit the filing system and contains, in addition to descriptions and flooring rules, a large number of very fine illustrations in color, showing artistic wood floor designs.

The John Douglas Company, Cincinnati, Ohio, has issued an attractively prepared catalog describing and illustrating its line of sheet iron, porcelain enamel medicine cabinets.

Speeding Up Your Painting and Profits

Painting with DeVilbiss spray-painting equipment will speed-up the work and bring correspondingly bigger profits to you.

Spray painters will do more jobs for you, in your present working time, by spending less time on each job. Your men will like to operate the DeVilbiss spray gun because the work is cleaner and will not wear them out: this also has a favorable bearing on amount of work done and profits for you.

DeVilbiss Spray-painting System



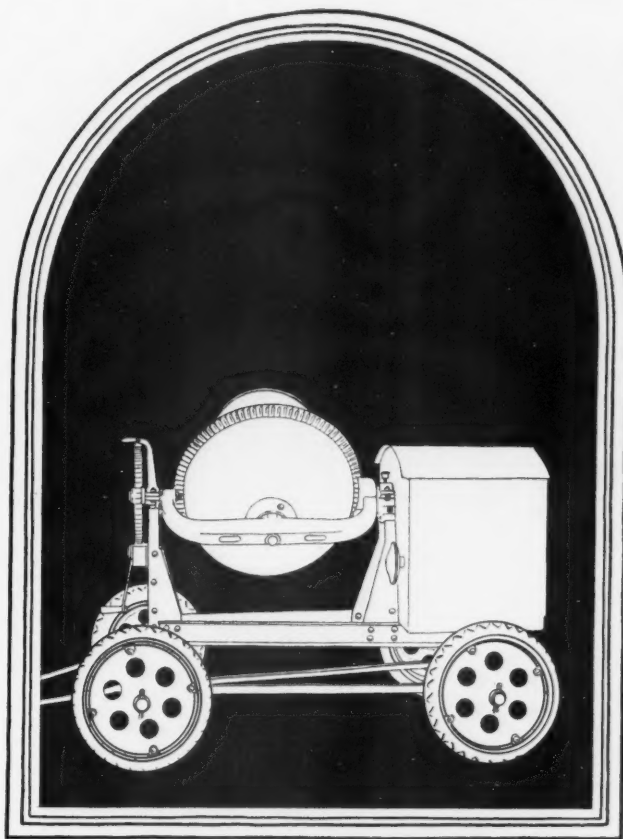
gives you all that is practical, complete and reliable in spray-painting equipment. The DeVilbiss spray gun operates on the lowest practicable air pressure; it makes possible 4 to 5 times faster painting than can be done with the hand brush; it insures a more thorough and uniform coating with any kind of paint, on any inside and outside surface.

Further interesting facts about the DeVilbiss Spray-painting System, that will point the way to more painting and profits for you, will be gladly sent. Get the facts.

The DeVilbiss Mfg. Co.

238 Phillips Ave.

Toledo, Ohio



A small mixer that is built to big mixer standards

THE Leach-Oshkosh "half-bag" tilter is a new addition to an old established line of building mixers.

The hot riveted, all steel frame, reinforced with gusset plates, sets a new standard for strength and ruggedness. Main bearings have reserve oil wells and heavy bronze bushings. Equipped with dependable Fuller & Johnson Motor. Trucks—mounted on disc wheels, bronze bushed, demountable rubber cushion tires.

A special mixing system, together with the large capacity of the mixing drum, has been carefully developed to provide a thorough and perfect mixing action.

Regardless of size or type, each mixer built by Leach represents the highest development of Leach design and construction.

Full information on any model or detail will be promptly furnished on inquiries to the factory or nearest office.

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